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I

THE REAL UNIVERSITY[1]

My hope, today, is to portray, if I can, the characteristics of the real university—to set free the elusive spirit which is still held captive and struggling to express itself. The explanation must be true not only historically of Athens and Alexandria, Rome and Berytus, Salerno and Bologna, but actually of Berlin and Oxford, St. Andrews and Paris, Harvard and Columbia.

Let us scrutinize the usual shibboleths. We are told first that the object of the university is to diffuse knowledge. But the secondary and the high schools do the same. The university is not simply higher, it is different. The second explanation, advanced especially in our country, where the so-called university is often a congeries of technical schools held loosely together by an insignificant college of liberal arts, is that the university is designed to give professional training and to prepare students for the activity of work-a-day life. But surely proprietary medical schools or independent business institutes, multiplied even to the nth degree, can not constitute a university. Something else must be injected into them before the metamorphosis is complete. The most common contention, again, is that the function of the university is to promote science. But this also is clearly defective. It is not true historically. It, would indeed, be venturesome to assert that the trivium

[1] An address at the opening of the 163rd year of Columbia University, September 27, 1916.

or the quadrivium, with their meticulous distinctions and hair-splitting disputations, represented the pursuit of science. Neither scholasticism nor humanism, but the learned societies of the seventeenth century, mark the beginnings of science. Secondly, the pursuit of science is not confined to the university. The Rockefeller and Carnegie Institutes promote science, but are obviously not universities. Furthermore, to accept the promotion of science as the criterion of the university would be to exclude the very professional schools of which we have just spoken. The older institutions still practise this exclusion, but only in part. Who will say today that the training of the lawyer, the physician and the chemist—included even in Berlin—is any more important than that of the engineer, the architect or the teacher? What is the distinction today between the learned and unlearned professions? To exclude from the university the training for the newer professions is a confession of belated medievalism. But if the professional school, which is supposed to inculcate art rather than science, is rightfully a part of the university, how can we assert that the university stands only for science? And lastly, do not the fine arts actually find a growing lodgment within the university? Are not music and painting and poetry and even sculpture coming to form an integral part of the curriculum? But surely art is not science. Thus from every point of view the promotion of science, deeply as it may enlist our enthusiasm, does not and can not constitute the distinctive purpose of the university. But if, then, neither the diffusion of knowledge, nor professional training, nor the pursuit of science is the real spirit of the university, what is, and how shall we find it?

Perhaps we can reach our answer in a roundabout way. The three great social institutions that have been developed by mankind, in the attempt to achieve the harmony of life, are the state, the church and the university. The state stands for the principle of order; its contribution to social harmony consists in the promotion of group welfare by the associated effort which we call political action. Whatever be our differences as to the exact metaphysical concep-

tion of the state, whether we ascribe to it merely the night-watchman function or the more positive duty of constructive achievement, no thinker will deny that the state stands for compulsion or enforced order.

The contribution of the church to social progress is the endeavor to achieve the spiritual unity and the internal harmony of the individual. To many, indeed, especially in this audience, the only church is the laboratory; the only religion is science. But in the ripe judgment of what is now again perhaps a growing class we need something more than science to give us the glow of ethical fervor. Science may enable us to ascertain the truth; we need something else, call it what you will, to urge us to the right. Science may give us the criterion; the right kind of religion strengthens the motive. Purge it of its dross, liberate it from its superstitions and excrescences, there still remains something which alone can satisfy the craving for spiritual unity and feed the hungry soul.

In contrast to both of these stands the university. Its contribution to social progress may be summarized as the endeavor to promote and to impart intellectual freedom. The function of the state is to supplement the individual; the function of the church is to moralize the individual; the function of the university is to emancipate the individual. The state stands for order; the university for freedom. The church seeks for spiritual truth; the university for intellectual truth. The state stands for power; the church stands for unity; the university stands for independence. The state is the orderer; the church is the harmonizer; the university is the emancipator.

In what sense, however, is this emancipation to be understood? First, I should say emancipation from the thralldom of nature. Intellectual freedom means liberation from superstition and all the primitive manifestations of mental enslavement. The university achieves the victory of mind over matter, of man over nature. Second, I should put mastery over one's self. To secure this mastery we need to strike off the fetters of prejudice, the bonds of

convention, and above all the shackles of sentiment. Civilization means the control of the impulses by the intellect: without the fire of perfect freedom the rough ore of human nature will not be transmitted into the pure gold of human possibilities. The university, thru the liberation of the intellect, is humanizing mankind. Thirdly, the university stands for accomplishment. We need to do more than the mere routinier or the narrow specialist. The real expert must have a broad basis and a wide vision, with the creative capacity. The real expert is the surgeon who performs a new operation, the architect-engineer who builds the first skyscraper, the lawyer who distils from the books and the cases a new and illuminating principle. To produce this type of men we need the inquisitive, the imaginative spirit, which is the concomitant of true emancipation. Finally, the fourth aspect of intellectual freedom is the courage which it implants in the struggle for social and political justice. The spirit of social unrest is to some a hydra-headed monster or Frankenstein; to others, the angel with the flaming sword. What greater role for the university than to help mold public sentiment, to penetrate the hard crust of convention and tradition with the fertile showers of a free spirit, or to temper the impetuosity of impulse with the ripe wisdom of the emancipated intellect.

The old antinomies and shibboleths are thus largely fallacious. In lieu of the contrast between the scientific and the professional, the abstract and the concrete, the pure and the applied, the ideal and the utilitarian, the theoretical and the practical, we must put the new contrast between the progressive and the traditional, the adventurous and the routine-like, the creative and the receptive. The time always comes when we must cast off our moorings and embark on the stormy sea of the unknown. Without the stout craft of experience, without the rudder and compass of reliance on the best judgments of the past, the adventure may be hazardous. But unless we keep the prow pointed forward, and resolutely press on despite wind and wave,

we shall never make the distant port or conquer the promised land.

If, then, the spirit of the real university is to promote and to impart intellectual freedom, we must be careful not to separate the two sides. The promotion of intellectual freedom connotes research; the imparting of intellectual freedom implies teaching. There can be no true university without both. Research may be found in the learned society or in the scientific institute; teaching can be carried on in the proprietary school. The university is neither the one nor the other, but by the reaction of research and teaching upon each other transforms both into a higher and unique compound, precious to instructor and student alike. For the former needs the enthusiastic and eager student to spur him on and to replenish his creative energy; while the latter needs the inspiration both of method and of personality. The true university is the one wherein, by this process of mutual reaction, intellectual freedom is promoted among the instructors and imparted to the students.

The obstacles and dangers to this university spirit may be clast as external and internal. The external perils are, today, the political and the economic conditions. Passing strange as it may seem, the university spirit is jeopardized by democracy, no less than by autocracy. For democracy levels down as well as up, and is proverbially intolerant of the expert. The concentrated and overwhelming public opinion that is so characteristic of the modern community is at once the chief safeguard of the democracy and the chief menace to the real liberty of the individual. Fanaticism becomes no less relentless or dangerous because it assumes a political rather than a theological garb. In the autocracy all are subject to the tyranny of the ruler; in the democracy all are likely to be subject to the tyranny of public opinion. The true university must afford an inviolable refuge from each.

Just as the political environment sometimes creates intolerance or repression, so the economic environment

occasionally engenders contempt or suspicion. In a youthful community, especially where the parsimony of nature invites unremitting toil, each self-appointed empire-builder is apt to regard the university with scarcely veiled contempt. And when the backwoods society has given way to the complexity of modern industrial life, the differentiation of economic classes inevitably leads to a divergence of interests which is reflected in the university all the more strongly as the university itself expands its scope and multiplies its activities. Instead of the thinly veiled contempt of the early period the university spirit has now to guard itself against the mutual suspicions engendered by the economic antagonisms of a highly developed industrial society.

The internal perils I should characterize as the college and the professional school. The college is indeed a part of the university, but only in the sense of being a threshold to the university. It has played a distinguished role in our development and is, perhaps, destined to retain that role. But no greater mistake could be made than to attempt to convert the college into the university by applying to it university principles. The university stands for intellectual freedom, for self-reliance, for rigorous method; the college stands for general mental discipline and for a liberal outlook on life. We must not confound them as to student body, as to method, as to instructors. There is, indeed, not the slightest need for conflict. On the contrary, there should be the fullest cooperation and mutual respect. But the college which forms a part of the university must be radically different from the independent or small college. It can not remain alone and apart. It must not limit its horizon to the purely parochial view. If it is primarily the approach to the university, it must fit into the university structure and not be permitted to dominate that structure. It must be animated in its every act by a finer and larger loyalty to the whole institution of which it forms a notable part. The real university can never emerge from the left-overs of the college. A great

college is compatible with a great university; but if we regard first the college and then only the university, we may, indeed, have a great college, but we are sure to have an insignificant university.

Perhaps more important, however, is the menace of the unregenerate professional school. If what has been said above is true, the university must train not alone the doctor and the lawyer, but the members of the other professions as well. The imperious demand of the modern community that the university shall render public service and shall be in close touch with every phase of instructed social activity, is clearly irresistible. But to justify the inclusion of all these schools in the university we must insist on their breathing the spirit of the university, which, as we have seen, comprises research as well as teaching. The narrow professional training can not produce the intellectual emancipation for which alone the university stands. He, therefore, misinterprets the university who thinks that the object of the law school is simply to turn out a good lawyer, of the medical school to produce a good practitioner, of the engineering school to create a good engineer. The true university law school must be, as well, a school of jurisprudence; the medical school must train the future discoverer of new truth; the engineering school must develop the creative expert. As Lord Verulam told us long ago: "If any man thinks philosophy and universality to be idle studies he doth not consider that all professions are from thence served and supplied."

The university spirit, therefore, demands with inexorable logic that every professor in the professional school should have made, and should be making, positive contributions to the subject which he professes. That he should be a good teacher, able to impart the correct method, goes without saying; but that he should possess the creative spirit is equally imperative. The true university should have no room in its law faculty for the so-called leading lawyer, in its medical school for the successful physician who is adding nothing to medical science, in its

engineering or other professional school for the busy practitioner who is doing, perhaps a little better, what everyone else does. In the true university, research is no less important in the professional schools than in the non-professional faculties. When the law school becomes also a real school of jurisprudence, when the medical school is regarded as the home of medical science, and when the other professional schools concern themselves with deepening and broadening the bases of their respective disciplines, then for the first time will the professional student realize what intellectual freedom means, then will the university no longer be menaced by unregenerate utilitarianism, then will the traditional opposition between the old faculties and the new disciplines fade away, then will every part of the institution be united by the same bond and animated by the same spirit. Then, in short, will emerge the real university.

If, now, we turn from the spirit to the form of the true university, we are opening a huge volume of which there is time to turn only a few pages. The four characteristic institutions of the American university are, respectively, the trustees, the president, the faculty and the student body. With respect to each of these there has recently been much discussion and not a little criticism—symptoms of the healthy discontent which is the first condition of progress.

The simplest problem is that of the student body. The true university will seek not for numbers, but for quality; it will give its students the fullest freedom of action and will seek to reduce the red tape of supervision to the smallest possible minimum. It will distinguish sharply between the collegian and the university student at a point not yet definitely settled but which is in process of being reached. And, notwithstanding the delightful essay of William James on the Ph.D. octopus, it will continue to regard the doctor's dissertation, however inadequate, as a precious thing. For, altho not all Ph.D.'s. can be great thinkers, yet the doctor's dissertation, like the masterpiece in the medieval guilds, is an indication, however imperfect, of the mastery that has been achieved in method, and of the glimpse

that has been obtained of the serene and lofty heights of unfettered thought and of creative power. But, on the other hand, the student also must learn to develop the spirit of self-reliance; to remember that the time has come for independent achievement; and to feel, on crossing the portals of the university, some of that sacred awe experienced by the devout worshipper on entering a noble cathedral.

And secondly, the faculty. Faculty originally denoted the power of accomplishment. The faculties of the university were, and still are, its real power of accomplishment; and in that sense the faculties are the university. Historically, indeed, the universities were sometimes guilds of students as well as of instructors; and not infrequently were the professors ingloriously subject to the control of their auditors. But despite this, it was even then the faculties that actually constituted the university.

But if the faculties really constitute the university, we must be careful not to have the wrong kind of faculties. If the true university is the embodiment of freedom, it goes without saying that the professors must be free: free to think, free to express their thoughts, free from crushing administrative duties, free from unduly long hours, free from financial embarrassment, free to elect their representatives, free to share in the choice of their successors or departmental colleagues. To be worthy of this freedom, however, is the indispensable correlative. The freedom to express their thoughts, especially in extramural utterances on hotly controverted questions of policy, must be tempered by the feeling that they can truly represent their institution only by bearing the torch of emancipation—emancipation from prejudiced thinking and from the extremes of comfortable obscurantism or callow radicalism; that they never can truly represent it by indulging in the cheap enthusiasms of intemperate partisanship. Freedom from administrative or scholastic duties must not be utilized as so much leisure to enter into more or less dubious outside lucrative pursuits, oblivious of their higher duties to the

jealous mistress, science. Freedom from financial worry must not be employed for vegetation or for peaceful browsing on fields which ought to be their avocations. And finally, freedom to elect their successors must not be abused by the unworthy motives of nepotism, of social cliquism, of inbreeding, or of fear of being overshadowed. When these obligations are thoroly realized, and not till then, will all the faculties be the embodiment of the real university.

The president is the product of a peculiar development, unknown elsewhere in the world. Unlike the medieval rector, he is not elected by the students; unlike the modern rector, he is not elected by the faculties. He is a survival from the early American college where some permanent head was needed to select and to control the schoolmasters and to discipline the students. His lot, today, is not entirely enviable—for he has to mediate between the trustees, the faculty, the students, the graduates, the benefactors and the general public, each not infrequently with divergent views. To those, however, who would incontinently abandon the presidential office as incompatible with the true university the following observations are pertinent. Even in the continental universities of Europe the minister of education, or his delegate, performs not a few of the functions of the American president. Secondly, it is doubtful whether the rapidly proceeding metamorphosis of the primitive college into the great university does not require a policy and an organization of greater permanence than can, in all likelihood, be secured by the shifting representation of a perpetually changing faculty. Thirdly, autocracy never gives way to democracy by any such sudden jump. Just as in the political life of Great Britain we find the four stages of absolutism, constitutional monarchy, aristocratic republic and the still inchoate radical democracy, so in our university life the Anglo-Saxon idea of progress can be realized only by a gradual transformation of the office and the function of the university president. We can already now discern the outlines of the inevitable transition. The president will be a scholar, endowed with tact and ad-

ministrative skill. He will treat the members of the educational staff as his colleagues and will endeavor to voice their collective judgment. He will avoid the mistake of confusing the true university spirit with mere administrative efficiency, and will insist upon each faculty having a voice in the selection of its dean. He will see to it that mere machinery is subordinated to scholarship, and that the substantial university rewards of both emolument and position go, primarily, to those thinkers who have shed lustre upon the institution. He will protect himself against the occasional incompetence or shortsightedness of the departments, divisions, or even schools by subjecting their recommendations for appointment or promotion to a body of impartial scholars who have shown by accomplishment their devotion to the university ideal and who will thus be able to hasten the transition of our present amorphous institutions into true universities. If the president does all these things, he will probably remain for some time to come the head of that aristocratic republic, which will deserve to become a real democracy only when the ideals of the true university animate every instructor and every student.

Finally, the trustees, that still more unique product of American life. To the trustees is delegated, primarily, the financial responsibility for the university. And while we must not forget that the faculties of the medieval university attended successfully to all their financial concerns, it remains none the less true that the American trustees represent, in this respect, the activity of the government officials in Europe. Moreover, not to speak of the *Reformatores studii* in the Italian universities of the fourteenth and fifteenth centuries, we find boards of trustees in the newer continental institutions—scientific and professional —which are not yet incorporated into the universities or which are not under the immediate supervision of the government.

We must indeed not forget that the trustees of the American universities are for the most part intelligent and

hard-working supporters of the institution, whose devotion in many ways lightens the deliberative duties of the instructors. But if the trustees of what was formerly the small college are to remain in charge of the great university, they like the president, like the faculties, like the students must learn, as they are fast learning, to represent the true university ideal. They must learn that the professors are not employés, that academic freedom must be unrestricted, that academic tenure must be permanent, and that in the rare cases when it may seem necessary to scrutinize the utterances or the actions of an instructor, not they but his colleagues, within and perhaps without the particular university, form the only proper and safe medium of investigation. They must learn to be on their guard against introducing into the university the methods or the spirit of the outside activities of which they are, perhaps, eminent exemplars. They must remember that in education, as in every vocation, even the practical view is best represented by the practitioner. They must learn to welcome the unofficial, nay even, as not a few institutions are now doing, the official and formal cooperation of faculty representatives in every question of university policy. They must learn to insist not alone on the obligations, but on the rights of the instructors, and must be prepared to defend them against the unfounded clamor of public sentiment and of private interest. In proportion as they will learn these truths, and will come to realize that they are trustees not merely for the material progress of the institution, but primarily for the perpetuation of the university ideal, just in that measure will they make themselves indispensable and beneficent.

In social life nothing lasting has ever been achieved without whole-hearted cooperation. We all—trustees, president, faculties and students—must learn to emphasize our duties rather than our rights; only thru a self-sacrificing readiness to perform our mutual obligations can we justly insist upon our privileges. The chief obligation that rests upon us all is the recognition of, and de-

votion to, the true university ideal. Each one of us is in some respect in a position of authority toward others. Let us beware how we use this authority. Let us divest ourselves of the false notions that have grown up thru tradition and perversion. Let us realize that in the true university we are all colleagues—teachers and students, deans and instructors, trustees and faculty; and that in a university there is no room for a sacerdotal hierarchy or an educational organization based on political or industrial efficiency. Let us remember that the spirit of the university is a subtle and elusive thing, all the more delicate and frail as it is pregnant of glorious potency. Let us preserve this spirit from the rough touch of blundering interference and of well-meaning but clumsy manipulation. Let us keep alive the tiny spark which is even now visible, and let us endeavor, by careful tending and by unselfish and intelligent devotion, to fan it into the flame of the real university spirit which will take off the chill of educational ineptitude and which will illumine, for all time, the path of intellectual development and of permanent social progress.

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II

MILE-STONES IN MEDICINE[1]

Nowadays in the rush and intensiveness of our busy lives, we are apt to forget or at least to neglect everything but the task immediately before us. And tho without this attitude of dissociation and concentration little would be accomplished, there is no harm occasionally in stopping for a moment to take our bearings and to glance, first behind us and then before, to see whence our progress comes and whither our activities are leading us.

Not long ago I came across an old pamphlet printed, as was stated, by desire, in New York in the year 1769. It was entitled A Medical Discourse or an Historical Inquiry into the Ancient and Present State of Medicine, by Peter Middleton, M.D., Professor of theory of physic in King's College. Quaint as this discourse now appears, it derives its principal interest from the fact that it was the address delivered at the opening of the medical school in New York.

According to his account, division of labor in the medical school at that time was a simple matter. The important subject of the theory of physic included both physiology and pathology, while voracious *materia medica* tried to digest both botany and what there was of chemistry. Referring to chemistry he says, "It is a study no less pleasing than advantageous to the physician and an amusement equally curious and entertaining to the gentleman and scholar." His knowledge and admiration of the ancients were prodigious but he freely confest that "all the progress made in the art of healing at or before the flood may well be imagined to have been inconsiderable."

[1] An address at the opening of the academic year of the College of Physicians and Surgeons, Columbia University, September 27, 1916.

Making no pretense to being an historian I can not detail, as did Dr. Middleton, the facts concerned in the development of the science and art of medicine. But in reviewing recently the work of our profession I have been interested to see how some of the tendencies which are especially emphasized today and which have seemed to grow out of our phenomenal advance in the last fifty years, have thru centuries been repeated over and over again. These repetitions are especially striking in the art of medicine and in the organizations which have been devised to make it effective. In comparison with this organized effort it is instructive to observe what influence the individual worker has had on the progress of medicine, an influence that affects most directly the science of medicine.

Claude Bernard has said that observation is a passive science, experimentation an active science, and of the two the first is far the commoner and develops earlier. For centuries the only productive study was carried on by the inductive method, the objective study of disease, and during this period medicine as a descriptive science bears about the same relation to the medicine of today that botany does to pharmacology. Now it is evident that any achievement in science depends largely upon the method of investigation and in the history of the world there is nothing more surprizing than the tardy growth of that impulse of the human mind which leads men to subject natural phenomena to scientific experimentation.

The Greeks were artists, philosophers and passive scientists, and in the hands of Hippocrates modern clinical medicine really begins. He lived in the age of Pericles, a contemporary of Euripides, Phidias, Socrates, Anaxagoras and Protagoras, when men were trained to use their senses to obtain information and their hands to record it. As far as he could go Hippocrates went. He looked, and handled, listened, smelt and even tasted, to gain information; sputum, urine, feces, sweat and even tears were carefully examined. But instruments, except for a few surgical tools, were wanting; the natural sciences such as existed

in the form of astronomy or physics, zoology and even anatomy, were useless, since they lay outside the province of medicine and were not adapted to its use, and consequently when information gained from observation stopt, speculation was uncontrolled.

Five hundred years after Hippocrates, Galen in the second century, A.D., went one step further. The study of anatomy by the Alexandrian school had linked that science with medicine and increased the possibility of surgery. Using this knowledge Galen even interfered with nature to gain information and experimented. Perhaps in the same inquisitive manner as a child who pulls the cat's tail to see what it will do, he cut the recurrent laryngeal nerve and brought about aphonia. He also found that when the spinal cord was severed a hemiplegia resulted. But unlike Hippocrates he speculated riotously, wrote prodigiously, developed a complete system of medicine and left behind him volumes, and a reputation that pervaded medicine for good or evil during sixteen centuries.

With the decadence of Rome and the decline of her utilitarian spirit a new and overwhelming force arose. The humanistic doctrines of Christianity were now brought to bear upon the art of medicine while the passive science, accurate observation, past to Arabia and the Mohammedans. In their hands the objective study of natural phenomena kept alive the spirit of science which when combined with the diffusion of culture and charity produced a civilization far in advance of Europe. Rhazes (860–932), the great clinician who used the method of Hippocrates and portrayed smallpox and measles in a manner almost modern, was followed by Avicenna (980–1036), the father of geology, while from the interest in chemistry there grew a *materia medica* of enormous bulk, and thru the studies of Geber the alchemy of the middle ages. Hospitals and dispensaries were founded in Damascus, Bagdad and Cairo, and the description of the great Al-Mansur hospital in Cairo scarcely gives us reason to be proud of our own efforts. It was a huge quadrangular structure with fountains playing in

four court-yards, separate wards for important diseases, wards for women and convalescents, lecture rooms and extensive libraries, out-patient clinics, diet kitchens and an orphan asylum and a chapel. It employed male and female nurses, had an income of about one hundred thousand dollars a year and disbursed a suitable sum to each convalescent on his departure so that he might not have to go to work at once (social service department). The patients were nourished on a rich and attractive diet and the sleepless were provided with soft music, or, as in the Arabian Nights, with accomplished tellers of tales. What more could the art of medicine without modern science accomplish? Libraries of great value and size were collected and medicine was taught at the great hospitals in Bagdad and Damascus and Cairo.

In Europe thruout this period, the gradual rise of Christianity focust mens' minds almost exclusively upon the care of the sick, and there were gradually constructed for one or another immediate cause, hospitals thruout the countries of western Europe. The celebrated Basilios founded at Caesarea by St. Basil, in 369 A.D. was followed slowly by other institutions and it is stated that the Hotel Dieu was in existence as early as 660. The appalling epidemics and the rapid spread of leprosy must have had great influence in demonstrating the necessity of these establishments for the poor and sick, and indeed, the building of the leper houses or leprosoria, which went on so rapidly that some 19,000 of them existed in Europe during the 13th century, must have represented a vast social and hygienic movement toward a genuine prophylaxis against this disease. During the middle ages, this humanistic movement spread, and the epidemics of syphilis, plague, typhus and smallpox were fought by charity and superstition. At the beginning of the 16th century great hospitals, many of which are in use today, such as the Ospedale Maggiore in Milan, were built, and purely from the point of view of philanthropy the patients were probably well cared for.

But medicine, almost exclusively in the hands of the ecclesiastics, worn threadbare by metaphysical discussion was bereft of its science and sank to the lowest level. With the rise of the medieval universities in the 12th, 13th and 14th centuries, there came a revival of learning and an abortive renaissance. The study of medicine from books proceeded with impetuosity, and in 1224, Frederick II issued an edict governing the license to practise which sounds, in the yearly requirements at least, not unlike some modern curriculums. The candidate must have studied logic for three years, medicine and surgery for five years and must have practised for one year under some experienced physician. But upon what was this highly cultivated candidate examined? Not his knowledge of plants, of animals or natural phenomena but upon books, the genuine books of Hippocrates, Galen, Avicenna. Certainly the formula for medical study was at a high standard but the substance useless beyond compare. The best medicine for centuries was practised by the surgeons who still used their eyes and their hands, and while the learned physicians suffocated in disputes and speculations, Mundinus cut into formalism with his anatomical knife, and Henri de Mondeville protested that "God did not exhaust all his creative power in making Galen."

At last, however, the old order of things changed. The discovery of America, the invention of printing, the Reformation, the dawn of free thought, at first cruelly persecuted and then persecuting, all these gradually paved the way to the objective study of natural phenomena. The critical analyses of Bacon and the Spaniard, Luis Vegas, who attempted to show that the study of all natural phenomena should be based on personal observation and experiment, tho probably having little effect upon contemporary medicine of the 16th century, represented at least a reversion in thought from the deadening scholastic influence against which the fantastic Paracelsus raged. In medicine the awaking spirit of objective or inductive study was exemplified, by the work of Paré, of Vesalius and the great

botanist, Cesalpinus. It was at this time also that Galileo made his fundamental experiments in dynamics, basing his hypotheses upon accurately observed facts, testing these hypotheses by experiments, changing them to accord with the results of his experiments and finally from the complete data deducing general principles that form today the basis of the science of dynamics. This was an entirely new and revolutionary method of thought and action. All these forces were responsible for the development of the individualistic tendencies, the new method of investigating natural phenomena and the desire for truth which characterized the 17th century.

The spirit of this century is everywhere apparent, and comes down to us no less in the work of Shakespeare, Velasquez and Rembrandt than in the study of natural phenomena. Investigation was directed towards botany, natural history, geology and particularly towards astronomy, mechanics and physics, and disclosed a wealth of information about the organic and inorganic world, reaching its highest achievement in the work of Newton upon the solar system. In medicine, still isolated from the other sciences, the study of the human body by means of dissection became common and was often made publicly, accompanied by music and plays. Anatomy as a descriptive science progrest with rapidity and Malpighi using the microscope recently invented by Loeweenhoek, found a world of new form and structure. Sydenham, the great clinician, following the example of Hippocrates and Rhazes, studied and described disease as he saw it, and as a consequence has left us pictures which are models of pure objective study. Remarkable as were these advances in medicine and as valuable their results, they still depended purely upon a passive science. The great achievement for medicine was made by Harvey in the discovery of the circulation of the blood. But the importance of this discovery reaches further than the new idea, revolutionary as it was, for Harvey by introducing into medicine the method of experimentation founded the science of physi-

ology. Indeed, when one asks which has been of the greater benefit to medicine, the discovery of the fact or the introduction of this method of scientific experimentation, the answer must be unhesitatingly in favor of the latter.

The effect which these advances had upon the following century is at first sight surprizing. Men started to collect information as they might collect postage stamps. The foundation of systems and the development of encyclopedists took the place of research and experiment. Original productiveness except in such brilliantly isolated instances as Morgagni, Hunter and Jenner, was largely replaced by systematized and cooperative work. Thru the incentive of Linnaeus botany became popular and botanical gardens were planted in great numbers. Museums, libraries and scientific societies were founded and finally the teaching of medicine was revised and organized at Vienna, Edinburgh, thruout Germany and in this country. For the first time in many centuries the hospital was used for the bedside teaching of clinical medicine, and the practise of medicine elevated to a plane previously unknown.

Towards the end of the 18th century the rise of the physical, electrical and chemical sciences thru the work of such men as Black, Cavendish, Priestley, Lavoisier and Dalton, laid the foundation for their rapid development which has so profoundly influenced first the arts and industries and thru them our practical existence and latterly our medicine. Before this relation was obvious, however, another influence arose.

The brilliant young anatomist, Bichat, who is said to have lived in his dissecting room, and who died in his thirty-first year, looked deeper than the organs and made the tissues the basis for anatomy, thus preparing the road for modern biology. As a science biology really rests upon the development of the cell theory advanced in the thirties of the last century by Schleiden, a botanist, and Schwann, an anatomist and physiologist. With the application by Virchow of this theory to pathology a veritable new world was opened to medicine, soon to be impregnated thru the

marvelous investigations of Pasteur, Koch and their many followers, with the living cause of this new pathology. Pasteur with one ingenuously planned experiment swept away the doctrine of spontaneous generation and showed not only how a seething mass of organisms brought death and destruction to mankind, but found a means to fight them.

By the latter part of the 19th century the pure sciences had progrest phenomenally, but until then they had developed quite independently of one another. In the last thirty years changes have come, due perhaps to the influence which Darwin has had in developing a line of thought that necessitates the idea of constant change, of correlation and of comparison. Under this influence physics and chemistry have intertwined their tentacles and have thus secured a firmer grasp upon their subjects. From this union indeed a flourishing bud, physical chemistry, has sprung. Physiology and biology no longer stand alone but unhesitatingly combine with chemistry and physics, while the medicine of today employs the results of all these. Indeed, as the art of medicine broadens, it applies to its needs not only these fundamental sciences but still others of more recent growth, for the study of heredity and eugenics and sociology are rapidly becoming indispensable to the ultimate solution of many of our practical problems.

To detail further to you the wonderful progress that has taken place since the discovery of oxygen in 1772, would require endless time. It needs only a moment's thought, however, to realize that the base of our elaborate and complicated existence rests upon the scientific achievements in physics, electricity, chemistry and mechanics and its structure is formed by the application of the discoveries and inventions in these pure sciences to the industries and practical problems of the day. In like manner the foundation for our progress in medicine depends upon the achievements in physics, chemistry, physiology and biology, while the present elaborate structure of the art of medicine has been made possible by the general application of this

scientific knowledge to the care and treatment of the sick and to the prevention of disease.

Jenner thru a single experiment established a principle in immunity. Once properly applied thru a vast organization, for we can conceive of vaccination carried on thruout the world as such, smallpox, ubiquitous in the 18th century, has been practically eliminated. As another example one may mention typhoid fever concerning which our knowledge, developed thru a long series of carefully planned experiments, has reached the stage that makes it possible with money and men to eradicate the disease. Clean water supply, the detection and isolation of carriers and prophylactic inoculation are the three necessities for carrying out this program. Of yellow fever, malaria and beriberi the same is true. Thru such practical requirements there has grown the vast subject of hygiene, an applied science affecting on a large scale great communities of people requiring an enormous and efficient organization of trained workers in medicine, engineering, mechanics, physics and chemistry. Along these lines much has already been done. Panama, once a pest hole, is today a health resort for winter tourists. Havana, not long ago feared on account of its epidemics of yellow fever, has been converted into a city as clean and safe as Boston or New York. Certainly these accomplishments are splendid examples of organized effort. But in our admiration for the accomplished deed let us not forget Levaditi, Ross, Carroll, Lazaer and Reed. To these men, endowed with a vision of a peculiar type, using the correct experimental method, the lasting credit is due.

Along another line too, that is in hospitals, organized effort is slowly making its way with the humanistic spirit, which was the incentive for their founding. These institutions are rapidly being converted in this country from charitable hostels where patients once were made comfortable until they recovered or died, into institutions where not only the therapeusis of today, involving as it does the elaborate arrangements for surgery, drug therapy, sero-therapy, dietotherapy, electro- and mechano-therapy,

and so on, can be successfully applied, but where accurate diagnosis of disease is possible and the future welfare of the patient watched and guarded. Indeed such organizations as the Mayos at Rochester are even being formed by other private individuals and thru the efforts of Cabot and others there is a definite movement to establish completely equipt central institutions both in the large cities and in country districts where private physicians may care for their patients and from which details of the health of the community may be managed. Such movements are not confined to the medical profession for Moore, the English chemist, and such writers as Bernard Shaw and Wells, who have the ear of the public, have advocated a still more socialistic plan and wish to place such organizations in the hands of the state.

Such rapid changes as have come within the last thirty years have naturally necessitated readjustments in medical teaching and even today the faculties of medical schools spend many weary hours upon their problems of reorganization. And even in the prosecution of research there is not only an effort to cooperate, but a distinct tendency to organize the individual effort, in hopes that by so doing it may become most effective.

The inestimable value and the immediate necessity of all this organized effort which grows apace and rivets our attention is obvious. But the most brilliant success can be only of contemporaneous worth. It serves a splendid purpose in solving a problem of practical importance and while doing so often unearths new problems. But in itself it is not a fundamental advance. The practical Romans drained the campagna but that did not advance the knowledge of malaria. True it is that the universal effort to stamp out leprosy in the middle ages effected after hundreds of years almost completely its purpose, and in our age the problem of tuberculosis, which is somewhat comparable, may also be solved by the same method. But think what a difference it would make if thru the expenditure of even a fraction of the vast sum that is required to effect this end,

even one mind could be developed that would see the way towards bacteriological cure or, better still, prevention of the disease. Here lies the real advance. Thruout the world's history great institutions and concerted movements have come, served their purpose and gone. During this time the secrets of nature whether animate or inanimate, so cunningly hidden, have been sought for by all conceivable methods, least successfully when too elaborate systematization has imposed formalism and servility upon man and the workings of his mind, more successfully during the individualistic periods and most successfully since the recent advent of experimental science.

Thruout the development of medicine it is apparent that real progress, lasting progress, has come only from individual effort expended in scientific investigation, whether this be purely inductive as was the method of Hippocrates or experimental as was the method of Harvey and Pasteur. The mile-stones of medicine, as of all the sciences, are marked by men's names, not by the actions of committees, of senates or of nations. These may retard or help progress but they never initiate it. It is upon the individual working silently for years, unhampered, free of thought, usually unappreciated, that we must depend for the idea, the jewel, upon which the wheel will turn. If once he finds this stone and shows how to apply it—for in medicine especially, knowledge must be serviceable to be of value—a whole army of workers are called into action and then it is and only then that efficient and well-directed organized effort contributes most to the welfare of the world.

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III

INTEREST AS A CRITERION IN VOCATIONAL GUIDANCE

One of the most prominent questions now engaging public attention is vocational guidance. In its ultimate significance this movement affects society thru and thru. Seldom has a problem arisen that ramifies so widely. Industry welcomes vocational guidance as an instrument for the amelioration of economic ills; education is coming to regard it as its chief function; the sociologist sees in it a solution of many perplexing social problems; and the individual, harrassed by doubts as to his own powers and baffled by the multiplicity of vocational opportunities, welcomes vocational guidance as a means of his economic, social and moral salvation.

In the development of such a sweeping movement as this it is not surprizing that in the exuberance of the moment some errors are made and some misconceptions take root. Probably the most frequent temptation is to lay too much stress upon some particular feature. It may be the economic phase or it may be the psychological phase; the nature of the error varies with different individuals. Perhaps the point on which the greatest misapprehension exists is the question as to how far the interests of an individual may serve as criteria in his vocational adjustment. All agree that interest is of great importance in stimulating to action. Baldwin classifies it as a feeling, the great service of which is to stimulate the will. James points out the ethical and moral implications: "When [a man] debates,.....shall I choose that profession?.....his choice really lies between one of several equally possible future characters. What he shall become is fixt by the conduct of this moment..... The problem with the man is less what act he shall now

resolve to do than what being he shall now choose to become." The potency of interest, then, in motivating human conduct forces one to recognize it as a prominent factor in vocational guidance. As to the exact place it shall occupy, however, and the emphasis that shall be placed upon it in proportion to the other factors in vocational adjustment, there is room for difference of opinion. In practise there is great diversity. Some vocational counselors almost neglect it. Others raise it to the position of final arbiter. The aim of this discussion is to examine the nature of interest and to evaluate it as a criterion in vocational guidance.

The first question to arise in such a discussion concerns methods of investigating interests. This is a problem in psychological technique. Two methods may be employed —objective and subjective, technically known as the "method of expression" and the "method of impression." The first involves the presentation of interesting stimuli before the individual and the measurement of his reactions. This method is based upon the fact that when the mind is pleasantly or unpleasantly affected, bodily reactions often appear, such as changes in circulation, respiration, and digestion; and that a record of these objective signs will enable one to judge concerning the states of mind that accompany them. The possibility of applying this method to the investigation of vocational interests has appealed vividly to the popular mind, and the method is being extolled as the solution of the vocational problem. For instance, an enthusiastic writer in a recent magazine proposes the galvanometer as an instrument for the study of interests. A very brief consideration of this will reveal the fundamental fallacies of such expectations and will serve to show the difficulties involved in all objective methods of investigating interests. The galvanometer is an instrument which, when connected at two points with the body, measures electrical changes in the body. Slight feelings often give rise to electrical disturbances, and it is assumed that the intensity of these feelings may be measured by the amount of deflection of the galvanic needle. Now there is no question that such

deflections are frequently associated with states of feeling. Their interpretation, however, is beset with difficulties. In the first place, the needle may deflect in either of two ways—toward the positive pole or the negative pole. A difficulty of interpretation arises here in that sometimes a pleasant feeling is accompanied by a deflection in one direction and sometimes in another. An unpleasant feeling may be accompanied by similar results. In other words one can not tell from the direction of the deflections whether the feeling aroused by the stimulus is pleasant or unpleasant. The writer, in using this instrument, has been able to secure a positive deflection by means of a pleasant musical chord, the major triad, and has observed a similar deflection after sounding a harsh discord. Furthermore, equal deflections may be produced by the presentation of different kinds of stimuli. For example, when a subject was asked to think about eating ice cream the needle deflected in the same direction and in the same degree as when the subject was listening to a pleasant musical chord. In a vocational situation should one advise this person to be a musician or an ice-cream manufacturer?

The assertion that intensity of interest is proportionate to the amount of the deflection is also beside the truth. It frequently happens that a stimulus which at one time arouses marked deflections, at another time fails to produce effect, or produces much smaller effect. Other facts of a more technical nature might be pointed out, but enough has been said to show the impossibility of securing light upon interests by means of the galvanometer. Its defenders will be obliged to seek another vocational nostrum. Other instruments have been proposed for the investigation of interests, such as the sphygmograph, the plethysmograph, and the pneumograph, instruments measuring involuntary changes in pulse-rate, blood-volume and respiration. The same objections may be urged against all, however, in that while they measure involuntary responses to stimuli, nevertheless one can not tell from the nature of the changes, whether the stimulus arouses a pleasant or unpleasant

feeling. Even so slight a stimulus as a pattern of wall-paper may be followed by pronounced change in pulse-rate, but it will produce the change whether beautiful or ugly—whether or not it be in harmony with the tastes of the individual. The theory about these involuntary changes is that they occur whenever the attention is attracted towards an object. They are, in short, accompaniments of any shift of attention and do not denote pleasantness or unpleasantness as such.

One fatal obstacle to the objective methods of investigating vocational interests is that the stimuli which might be used under laboratory conditions would have to be so simple as to have only the most ambiguous interpretation. What should one use, for example, as the interest-arousing stimulus for the occupation of bookkeeper? A ledger, a pen or an adding machine? These objects would arouse different reactions yet each would stand as a symbol of the occupation. Furthermore, each one might conceivably symbolize several occupations. Therefore, if a reaction did occur, one would not know what interest was denoted. It is evident, therefore, that the study of vocational interests can expect little furtherance from the "method of expression."

Can the "method of impression" be of greater service? In this method the person on whom the stimuli are to act, has simply to take note of the resulting changes in consciousness and to report what is there. This method is widely used in the practise of vocational guidance. It usually takes the form of a questionnaire modeled after the one devised by Parsons. The subject is asked to catalog his interests with respect to various fields, such as books, games, the drama. From his replies the vocational counselor deduces occupational interests or potential interests. This is the method employed most widely in the vocational guidance of the day, and it should be carefully examined to see what are its possibilities and limitations. One of the first criticisms that a psychologist would urge is that little reliability may be placed upon the introspections of most

persons. To look in upon one's own mind and report faithfully is a difficult undertaking. Even trained psychologists working under laboratory conditions find their ability taxed to the utmost. How much more helpless, then, are untrained observers of mental states when asked to describe their mental condition. In the vocational council chamber the task is doubly difficult because the search is for hidden motives and almost unconscious desires. So obscure are these that the individual himself is only vaguely aware of them and is certainly not aware of their relative strength. Replies to these interest-questionnaires, then, must be discounted.

Other considerations affecting this problem have to do with the nature of interest as a psychological fact. It so happens that some people have no vocational interest. Others and probably the majority, have several interests that may be turned to vocational account. The situation is further complicated by the fact that the interests are often of equal strength. Furthermore, they may be in unrelated fields, antagonistic to each other or they may be in related fields. In the former case some would have to be supplanted or subordinated; in the latter, they might all be unified.

Another characteristic of interests is that they vary in permanence. They are not always fixt things, but may be extremely ephemeral. It often happens that a person with well-defined interests acquires new interests of such a nature as to displace old ones or seriously to modify them. So pronounced are the resulting vocational changes that the concept of evolution may well be applied to the vocational choices of many individuals. A scientific study of biographies would yield many instances of such evolution.

Interests may have two sources—heredity and environment. Many people forget this and regard them as static things, predetermined and fixt. This conception of interest as static must be abandoned in favor of a conception that recognizes it to be largely a function of experience. Only seldom are hereditary factors so dominant as they are in the case of music. In most cases the environmental

influences are the stronger. An individual may be led to have interest in a number of things. James points this out when he says, "Any object not interesting in itself may become interesting.....and thus things not interesting in their own right borrow an interest which becomes as real and as strong as that of any natively interesting thing."

One important objection to the reliance upon interest in vocational guidance is that interest in a vocation is not always associated with capacity to perform the tasks or to acquire the skill necessary for success in the calling. Occupations are crowded with people whose interest is intense and fervid yet whose ability is undeniably deficient. To cite merely the musical profession will remind every one painfully of the truth of this statement. Before determining how much weight should be placed upon interest, experimental studies should be made in order to discover the correlation between interest and capacity. A suggestive study of special interests as related to capacities was made by Thorndike who found that interest and capacity in certain studies of the curriculum showed high correlation. Interest during the last three years of elementary school correlated with capacity in college by .6. The author proposes this relation as a partial measure of the extent to which early interests may be useful as symptoms of adult capacity. These results, tho valuable in theorizing about the school curriculum, are not suitable for use in practising or theorizing about vocational guidance. In the first place the study dealt with only the *relative* strength of a selected group of interests; no inquiry was made as to the strongest interest. Second, the particular interests selected were not vocational in nature. Third, the individuals studied were not representative of the population at large. The method of study, however, may be adapted to the solution of some of the problems of vocational guidance. It is highly desirable that such studies, comparing early occupational interests with later capacities, be made. The relation between adult interests and capacities should similarly be studied. The opinion might be ventured that

positive correlation between the two would not be high. The lack of correspondence between these two factors is one of the distressing signs that indicate the need for vocational guidance.

All the evidence shows that the use of interest as a means of directing vocational choice is beset with many difficulties. They have to do with methods of investigation, with the fact of dearth of interests and the multiplicity of interests, with the fact that interests are unstable, evolving things, and finally, with the fact that interest is not always associated with capacity. Taken altogether, the difficulties constitute a formidable group of obstacles. They are not unsurmountable, however, if one takes the proper view toward interest. A theory of vocational guidance that regards it as the basic criterion is wrong. It should rightfully be regarded as only one criterion and not at all as the sole or invariably decisive factor. Indeed, no single criterion is adequate for the giving of vocational advice. The individual under advisement should be studied in a number of relations. He should be measured physiologically and psychologically. The latter measurement involves the investigation of other mental traits besides interests. It is important to test the ability to remember, to reason accurately, and to associate ideas rapidly. Such measurements require the use of a number of psychological tests and a method whereby the several scores may be combined into one. This resultant score permits one to assign the individual to a place in the scale of intelligence. It is a quantitative measure. From a group of candidates it facilitates the selection of the "brightest." True, it does not indicate the fields in which the abilities of each individual might find most favorable soil; nevertheless it is an exceedingly useful measure in vocational selection. It has been used with marked success by Dr. Walter Dill Scott in selecting salesmen for business firms and forms the basis for the system in operation at the University of Chicago where tests are employed for the purpose of measuring the mental ability of college students. After making physio-

logical and psychological measures, it is necessary to view the individual in his social and economic relations, for various features of his environment might have serious bearing upon his success in certain vocations.

After making use of all important measures the question arises: To what extent may we prophesy? The popular mind gives to vocational guidance a predictive function. It is regarded as a system whereby a vocational counselor asks a few questions or gives a few tests and then prescribes a specific vocation for each person. This doctrine is stated in a recent monograph as follows: "A guidance bureau should be like a type-distributing machine which will take a hopperful of type of all the letters of the alphabet, and place each in its particular niche, in the one place of all places where it fits." In opposition to this view, the opinion of James is significant: "It is safe to say that individual histories and biographies will never be written in advance no matter how 'evolved' psychology may become." A thoughtful consideration of the implications in the "type" theory shows clearly that such a dream is impossible of fulfillment. The arguments against it are numerous and may be couched in ethical, metaphysical, psychological or physiological terms. The foregoing discussion from the standpoint of interest alone shows the view to be grievously erroneous.

When asked for a tenable view of vocational guidance the scientist can not do better at present than to regard it as a monitory process. This has as its aim to secure an inventory of the individual by scientific measurements, and to warn him of his powers and limitations. Upon this as a basis, then, the individual may set out to develop himself. True vocational guidance does not commit a person inalienably to a single vocational possibility. It sets no bounds upon his achievement but encourages him to develop himself to the highest degree.

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IV

PRESENT TENDENCIES IN TEACHING ELEMENTARY SCIENCE, WITH SPECIAL REFERENCE TO NEW YORK CITY[1]

In 1893 there appeared the most influential document in the history of secondary education in the United States. It was the report of the famous Committee of Ten of which President Eliot was chairman. That report prescribed nine "constants"; nine, that is, out of the fifteen or sixteen year-units of work that form the basis of four-year high school programs. These nine prescribed constants were three of English, two of mathematics, two of foreign language, one of history, and one of science. These nine prescribed constants have been found in practically all high school programs since that time.

What has been the fate of this one year of science required of all, the science unit placed earliest in the program? In the generation in which it has been on trial, has it established itself the country over as a unit with some uniformity as to content, or as to method, or even as to aims? It has not. Has it achieved a status with which there is general satisfaction? It has not. Today we find elementary science to be the most sensitive spot, the least settled course, in the whole program. With reference to no other unit or units do we find so much disparity of views. More factors have contributed to this condition than there is time now to discuss, but chief among them are the following:

1. The very richness and variety of the subject matter, the tremendous growth of knowledge and of applications in the field of natural science—these things have been a

[1] A paper presented before the Biology Teachers' Association of New York, March 3rd, 1916.

great handicap to the improvement of our pedagogy. So much that seems essential is proposed for inclusion in our courses, that, under the time limits, we have not been able to achieve a result that is satisfactory. No other high school subject save (to a less extent) our sister subject, social science, has had to contend with a similar situation.

2. Science teachers are not united. They do not occupy common ground. They have been trained as specialists, and only rarely do they view their problem as a problem of nature interpretation, with science, all science, serving as a tool rather than as a pattern. Our task is the interpretation of nature to youth, nature as manifested in the arts as well as apart from them. Science is simply one of man's ways of interpreting nature. Too often we let her formulas obstruct our vision, and respect our methods rather than the greater thing that our methods should interpret. So the science teacher is more often keen about the special virtues of his own knowledge than he is keen about synthesis of any science data whatsoever that will serve his educational purpose.

In consequence of these and other factors, two tolerably distinct divisions of opinion have arisen. The stress lies between the radical demand for larger scope of subject matter at all costs, and the conservative demand for the preservation of such organization of the subject matter, and of such training in principles as are held to be needful to the pupils as well as essential to science. The radicals stand for a course in general information as to science subject matter, while the conservatives insist that a course, to be science, and to be educative as such, must be unified in its organization, whatever its subject matter may be. This latter group holds that the interpretation of nature should be an orderly affair, employing general principles in the explanation of as many phenomena as possible, but with emphasis upon these principles quite as much as upon the specific instances of their application. The radicals, on the other hand, have scant patience with orderly interpretation. Emphasis on organization and on principles

appears to please them not at all. They hold that these things offend the nature of the child, and they would have none of them save as the child discovers them for himself. The child perceives nature, not in order, but in disorder; so they would have him study nature somewhat as the butterfly visits the flowers. They would have him flit from one set of facts to another as his curiosity or fancy may direct. Curiosity and fancy they have dignified by the name of "needs," and the pursuit thereof they often call "the project method." They have changed the terminology, but they do not appear as yet to have changed the nature of childhood. Of course, there is something in this idea, something good in it, and those of us who oppose its too complete application do not reject it. We seek rather to use it, to use it as we have used it before, to use it as an excellent method of teaching wherever it is fit for use, but we would not set aside all other considerations in its favor.

Such organization of the data, and such training in grasp of fundamentals as we seek to preserve, necessarily limits scope of subject matter. Hence, to satisfy the legitimate demand for scope, and at the same time to preserve organization and training, there has been proposed a two-year course planned as a whole, as against any type of one-year course that attempts in that time to range the whole field of science. This proposed two-year course may be described as a course in the interpretation of nature, using science as its tool, but not bound by the conventional categories of science save in so far as these categories aid in the teaching and learning process. It is a project course, but it chooses one major project instead of many, using minor projects to carry out its plan. Its major project is nature, which it seeks to interpret in an orderly and logical manner, drawing its conclusions so far as possible from familiar experience, ever widening and enriching that experience as it goes. The major aim of this course is to lead the child to an adequate appreciation of nature and of his own partnership therein; to give him grasp of the physical, and even some glimpse thereby of the spiritual, meaning of life; to fulfil

his right to know what nature is so far as we can tell and show him, and his right to learn on what terms with nature, and on what terms only, he can effectively fulfil his life. It is a course rich in information, but, even more, it is a course designed for appreciation and for response. It is a course of training in those great facts and ideas that form the very basis of any fundamental and enduring adjustment of human life to its environment.

For lack of such a course—such a course as this one in its fulfilment may come to be—there go forth from the schools each year many thousands of young people who, skilled in arts and smart in expression tho they may be, are yet lacking in such grasp of the real nature of life as will permit them to develop, as experience grows, a sound philosophy of their own. They are creatures of circumstance. Their feet are set on ground that shifts. They stand or fall as they happen to fit or not to fit into the social and economic sytem in which they are enveloped. They are over-specialized, incapable of new adjustments. Greater facility in fitting-in we try to give them; school men are fairly breathless in their efforts to appease the public demand for young creatures who will more readily slip as parts into that huge but artificial machine that awaits them. So we fashion them first of all to earn their living, and in the stress of this increasingly complicated task give less attention to preparing them to live their lives, to fulfil themselves rather than the will of their economic masters. The economic system is not interested in life fulfilments. Those who dominate it want willing workers, whereas a fulfilled life may be one that rebels against the existing order.

What has all this to do with the course in elementary science? Very much, I think. I have no more than hinted at certain ideas, but they are ideas that are to be the very bed-rock of our course. It is to be a course leading to liberation of thought, and it is to have its foundation in a fearless philosophy of life enlargement rather than in a timid and anxious philosophy of expediency. Such a source must have such a philosophy, else the study of nature

merits small place if any in our program. Limit your consideration to the expedient, to what we shall teach about this or about that, to what parade we shall make of the rules of hygiene, of sanitation, of eugenics, of forest conservation, bird loving, and crop improvement—stop there, lacking any real philosophy of your work, and you have insured futility from the first. If there is a philosophy of a course made up primarily of the merely useful, it is a philosophy of the flesh, not of the spirit; of the belly rather than of the brain.

Of late there has been a sort of challenge of biology by your principals, and I am convinced that one chief cause of this challenge is that the course has come to emphasize fact values at the expense of training values. Your course so fairly teems with facts of such indisputable worth that the worth of training in appreciation of nature as a whole seems a little out of focus. Now, if your course is to be judged solely by its contributions to physical well-being, then my sympathy would go to the principals who propose its restriction to less than half the place it now occupies. But it must not be so judged, and you will see to it that it is not so judged. If you can bring to attention its possibilities as well as its performances under present restrictions, you will win from all to whom the interests of humanity are more important than the interests of the established order, not less scope but more.

Our course is to furnish foundation material for a confident and true adjustment of the lives of those we teach, an adjustment not merely in terms of the bread and butter need of tomorrow, but an adjustment in terms of the great elemental facts of life, an adjustment that dismisses doubts and fears and begets confidence and courage, despite the trial of circumstances. We must train for what is big and natural in life, not merely for fitness to the temporary advantages of what is petty and artificial. We must train for the fulfilment of the promise of human life rather than for its subordination to an order that may stifle and crush.

My thought in these last sentences is suggested rather

than exprest and I wish very much I could put it before you more clearly, for in that thought, I am convinced, lies the future greatness of our work. In it, I believe, lies the reason why the teaching of elementary science is to become recognized as a social service of unsurpast importance. The great need of American life is a common philosophy, and we are to have our part in supplying it. As a nation we are devoted to expediency, to the thing that works now; let tomorrow take care of itself. This could not be so were our conduct aligned with even the most elementary facts of nature. Moral training, training in a philosophy of life, went out of the schools in the name of religion. We are to restore it in the name of science. No education has ever proved adequate that is an education of expediency alone; it must have its "deferred values." Youth seeks a philosophy, a religious foundation for behavior—the nature of youth demands it—and if we do not give him in the schools a foundation for a philosophy of his own, he almost inevitably adopts the philosophy that he finds in the streets. He will use the tools that we furnish him, but to what ends will he use them?

So science teachers must do more than give knowledge physically useful to human life. We must indicate what kind of fulfilment of human life it is—of life of the mind as well as life of the body—that nature indicates and ordains, if human life is to go on and up. Civilization has compelled us into ways that are not nature's ways. Evidences of human deterioration are so abundant that we are often afraid to confront them, hiding our heads in a sort of blind, unreasoned optimism. We patch and poultice where we can, but we are striking at the source only when we diligently train a new generation into appreciation of how great a thing is nature, and how small a thing is man. The uneven distribution of labor, the legalized gain of wealth without the production of equivalent value, and all our other great economic and social maladjustments, are factors capable of affecting the evolution of the human race quite as potently as did those other little but great

maladjustments of the past that determined whether whole races survived or perished. Modern generations must be brought face to face with the biological data that underlie their fate.

But knowledge is not enough. This knowledge must flow into conduct, else it is wholly vain. We must train for conduct that accords with the truth our course reveals. Thru love of the value and beauty of the life that fulfils nature rather than offends it, those we train must attain instinctive avoidance, even instinctive abhorrence, of conduct that impairs and destroys. I mean by this not only conduct in terms of physical habits, but conduct in terms of the whole adjustment of life. Patiently and continuously we must provide training to this end thruout the years of adolescence—the plastic, formative years. And so, you see, the science teacher, as insurer of its primary adjustments, becomes potentially the savior of the human race.

* * * *

Returning to the details of procedure in this matter, we may summarize present conditions as follows:

The situation as to general elementary science is less chaotic than it was even one or two years ago. Certain tendencies in the organization of this work have become sufficiently general and uniform in character as to permit the outcome to be rather definitely forecasted. This is chiefly due to certain administrative adjustments that are rapidly being made. As long as the elementary science required-of-all was largely confined to the first year of high school, the situation remained confused and unsatisfactory. This was because the demands as to scope of subject matter and the demands as to its organization and method of presentation could not both be satisfied in one year of work. In consequence of this, many different kinds of one-year elementary science courses have been tried, and none, after the newness wore off, has proved to be satisfactory. The need for a two-year plan for the organization of this work has been felt, but two things have heretofore prevented general adoption of such a plan.

These were (1) failure of science teachers to unite in support of such a plan, and (2) the high subject-pressures of the second year in large high schools makes it difficult to obtain place for science as a required subject in that year.

But now there appears a tendency to introduce general elementary science in the eighth and ninth grades, rather than in the ninth and tenth. This is a consequence of the development of departmental work in the eighth grade. Whether this development is under the junior high school plan, the Gary plan, or any other, so long as it leads to the teaching of eighth grade subjects by more than one teacher, its effect upon the elementary science is the same. All these plans are alike in having continuous instruction in science thru at least two years.

As to the agreement of teachers, it is to be noted that in all cases in which they have striven for agreement as to a one-year plan, no agreement has resulted. Whereas, in all known cases in which committees or conferences of teachers have worked on this problem in terms of a two-year course planned as whole, effective agreement has been reached. The two-year plan allows room for such agreement; the one-year plan does not. The most conspicuous and influential example of a two-year plan is the one embodied in the Report of the Biology Committee of the N. E. A., a plan that has been unanimously adopted by a committee of seventeen members representing all regions of the country. This plan takes interpretation of nature as the basis of the course, and organizes its materials primarily in terms of their relationships to life; the sequence of basic materials is exprest in the phrase "physical environment, plants, animals, and man." Tho this N. E. A. report is important, it is even more important to note that all other plans (so far as we know them) that have been independently worked out for a two-year course planned as a whole are practically identical with the N. E. A. plan so far as basic organization is concerned. In other words, given the two-year scope as a factor in the problem, the answer appears to be the same—namely, an orderly and logical procedure

from study of simple, inorganic phenomena up to plants and animals, and culminating in man. This work is made a logical and natural development from seventh grade geography.

Administrative officers themselves have taken the initiative in this matter. The recent report of the Program of Studies Committee of the Illinois High School Conference[2] contains the following sentences:

"The committee believes that the organization of a course in elementary science covering two years would be of large value in the solution of the science problem in the public schools.

"As a two-year course it will permit a certain amount of organization in the sequence of topics, while, at the same time, it will afford ample opportunity for approaching every topic from the point of view of the pupil's needs, interests and experiences.

"The committee suggests as a tentative proposal that the course proceed from simple inorganic phenomena to the more complex phenomena of organisms, culminating in the study of man. This sequence is roughly indicated by the terms *physical environment, plants, animals and man.* A marked advantage of this procedure is that it preserves a continuity with the natural science materials that have been standardized under the general term geography in the elementary curriculum."

Now as to New York. What has been provided here for the interpretation of nature to youth by means of science? Is it less than the two years of work that have been suggested? It is not. So far as time allowance is concerned, this two-year plan is already in effect. The difficulty does not consist in getting a larger place on the program than is now allotted. It consists in getting the work for which time is already allotted more effectively organized and more effectively taught. Continuity both of organization and of teaching are needed, and this is impossible as long as the work is, as it is now, part in the

[2] *University of Illinois bulletin*, January, 1916, No. 21, p. 29 *et seq.*

elementary schools and part in the first year of high schools. Elementary science teaching as well as many other things will be benefited by the closure of this gap.

Two periods per week are provided for elementary physical science and nature study in the seventh and eighth grades—practically the equivalent of one full year of work. This, taken in connection with the year of biology generally required in the first year of high school, gives us the full equivalent of time needed for such a synthetic course as has been indicated.

Ninth grade work is going to be added to the elementary schools. This has begun and it is going to continue. However extensive the disagreements of those concerned with the school administration of this city as to other matters, there appears to be no disagreement as to the matter just stated. Whether recognized or not, there appears to be actual accord on this point, namely, that ninth grade work is going to be done outside the walls of the present high schools, in many centers, and in conjunction with work lower than the ninth. This seems an inevitable tendency, and, theoretically at least, it is a desirable tendency.

This plan will relieve the congestion in the present high schools, turning over to them for ninth grade work only those whose prospect of completing the whole high school course seems assured. One may fairly estimate this number at less than half of all pupils of the ninth grade. This plan will also bring ninth grade work nearer the homes of the people, involving large savings in carfare. It also means much less expense in building costs than is involved in providing place for all ninth grade pupils in regular high schools.

But now we come to a sensitive point. Will this plan involve greater economy in teacher costs? Does it mean that the bulk of ninth grade work is to be done by less expensive teachers than those who are doing it now? Is this out-of-high-school ninth grade work to be turned over to elementary teachers, or may we expect that high school teachers can transfer into it without present loss or future

prejudice? As to this, opinions are divided, yet there seem good reasons for the belief that high school teachers will be able to transfer without loss. The building economies, the carfare economies, and the pedagogical advantages that this plan involves are all thoroly defensible and sound; the public will approve them. But economies accomplished by a general substitution of cheaper teaching for dearer teaching are, in most cases, indefensible; the public, if it understands, will not approve them. The public will not give up what it already possesses in the way of educational advantages for its children. The public may be slow and reluctant about increasing teachers' salaries, but a movement involving extensive reductions of teaching cost has never been successful in this country and probably never will be.

We may cite the attitude of the elementary school principals themselves with reference to having eighth or ninth grade science generally taught by elementary teachers. With his permission I quote Mr. Patri, who says that in this matter he expresses an opinion upon which the elementary principals are agreed. He says that the science work, especially the biological part of it, to be successful, must draw its teachers from the high school lists. He speaks of biology as "the best subject in the high school program," but speaks at the same time of the desire of elementary principals to eliminate this "best subject" from the upper grades if they are limited to the elementary school list for teachers of it. In other words, "best" tho this subject may be as a subject, it fails to justify itself if poorly taught. It requires thoro training in subject matter and in method. In the presence of a formal pedagogy, good science teaching perishes.

In what I have already said, a picture of the future of elementary science in this city has been suggested. There will be scores if not hundreds of schools in which ninth and even tenth grade work will be done along with more elementary work. As the elementary schools thus grow at the top, relieving thereby the pressure on high schools at

the bottom, the high schools in their turn will grow at the top, and we will hear of junior college work in high schools as we are now hearing of junior high school work in elementary schools. However the administrative details may be worked out, these things represent the inevitable development of our public school system, both here and in the country at large. Many high schools of the west are now doing lower college work, and there are hundreds of junior high schools the country over. Twenty-two have recently been authorized in Boston.

But to me, and I should think it would be so to you who have had most to do with ninth grade work, the training in the early adolescent period remains the most interesting, the most vital part of the whole scheme, and in pursuit of this interest I believe we are ready to follow our young adolescent, even tho we have to follow him to other walls than the familiar ones. For if our mission as to science teaching is to be fulfilled, we must start its fulfilment at that very period when youth is most impressionable, at that period when his ideas as to what sort of thing life is are yet in a fluid state, at that period long since recognized by the master teachers of the church as the period in which the fundamental adjustments are first and most permanently made, the period of which they said, "let us train him then and we care not who tries to train him afterwards." It will not do to wait. If we do not get the boy until he is a junior in high school, that fine first untutored keenness may be gone. He may be keen. He may seem to "get more out of science," he may master far more of its facts, but we shall miss something of that large first effect in contributing to his outlook on life; the keener he is, the more sure he is to have determined his outlook. You will not be forming him so much as he will be using you in the fulfilment of ideas already formed.

In this I am speaking, of course, of young people in general, and not of the frequent exceptional individual. The point I wish to stress is that, speaking collectively, it is at the time when young people have just begun to

reason about the large questions of life, just begun to wonder and grope and feel a little afraid as to what life is and what their place in it is to be—it is then that they need most what we have to give them.

Think of the boy (or girl) as he stands on the threshold of what we call his secondary education. He is fresh from that great glimpse that geography has given of the physical world in which he lives. He is ready to go on from that point. He needs to go on from that point. Is he interested in science? Perhaps not. He does not know what it is, and it has a formidable sound. But in life and what fashions it, he is more interested than in anything else. He is still wondering what sort of world he is in, and has a hunger that he may not show for what will interpret and explain the experiences that crowd upon him; for what will light up the future that he vaguely fears. His own place in the world—that is what he wants to understand. He wants a scheme of things, one founded in the familiar facts about him, one that interprets and makes things clear, one whose truth is attested in every experience rather than one that is in a book, apart from daily life. This hunger of his we know he has because we felt it so keenly ourselves; felt it even more keenly at his age than we feel it now, tho to have given tongue to it was quite beyond us.

The boy that still lives in us is better evidence of what boys want than a hundred experiments. Why experiment with him as we might with a creature of another order when he and we were one only the other day? There is much of false conception in the outcry against "authority" in education, and in the cry for "experiments" that so easily may not be real experiments. The "authority" of a wise teacher may be more scientific than a hundred experiments, each with their hundred sources of error.

So it is life and its controls, its laws and its inescapable conditions, its fundamental needs and its wonderful possibilities—these we will show him and help him interpret in his two-year course. Gradually, painstakingly, we will together paint the picture. First, the background. The

great primitive and permanent controls of life. Heat and light, matter and motion, gravitation, air, water, and soil, the dynamics of topography, the heavenly bodies, inorganic, and then organic, and their relationships; these we shall interpret thru many a familiar instance, thru study of media and of experiences that are matters of every day and all the time.

This setting of the stage for life—thru the fall term. Then, in true genetic order, plants; their relations to soil and water and light and air, and their great role in the life of men. This in the spring term, the most fortunate seasonal adjustment, an environmental study. Fall in the second year for animals, when insects abound, in September, best month of all for the approach to animal studies. Now we are getting in the foreground of our picture—life. We come finally to its central figure—man. Man in the last term of this four-term course. His modern adjustments made in keeping with the ancient and continuing primal needs. The body, product of a long and different past now appreciated, its limitations and its possibilities now realized, to be controlled and managed that it may work effectively like some fine instrument despite the artificial conditions that civilization imposes upon it.

Physical environment, plants, animals, man—do you get a glimpse of the picture that such a basis of the course suggests? Whether it is this picture that appeals to you or not, some sort of picture you will have to get. Until you do have some such unified picture in mind, you will find yourself at loss in determining what you yourself want the content of your elementary science to be. Until you do get such a picture, science will seem to you only a mass of facts to be picked from, and all this claim for the greater value of principles will be only a murmur in your ears. Until you yourself possess a vision of the unity of nature, all the eloquence in the world may not persuade you of the value of plans to create such a vision in the minds of youth. You will continue to think of this fact and that in terms of the facts themselves rather than in terms of their relative significances.

We are not to teach these pupils science, save as we use science to help us relate our facts and experiences and explain them. They are now in the most active period of mental adjustment that human life ever knows. Never again will there be such a fringe of "the tentacles of inquiry," excited in their groping search, as this that springs now from their eager minds. To what are these tentacles to be attached? Presently they will act as holdfasts of the mind. Shall they hold fast to truth or to error? Shall we not seek to fix some of them firmly on great truths of nature? It is not the tremendously difficult problem of readjustment with which we wish to cope—that in most cases will surely baffle us—it is this easier problem of first adjustment that is ours, the problem of getting the first mental adjustments right, right so far as perception of the primary facts of life can make them right.

Finally, as the supervisors and head teachers in this work, I see those whose training and rich experience has been in teaching biology in the high schools of New York. I see those who go into this work translated into a sphere of wider usefulness and of larger opportunity. You who do this will have two years or more in which to do the thing you are now trying to do in one, and suffering chiefly from too little time in which to make your work effective as you would have it effective. There will be continuity of teachers as well as continuity of subject in this enlarged opportunity for nature interpretation, and then you will achieve a result commensurate with your good efforts. I know of no group of teachers as well qualified to carry out this extended course as the New York teachers of biology are qualified —for inevitably the work will be largely biological. I have already indicated that I believe the teaching of elementary science to be a social service of unsurpast importance, so I can wish for you in the future nothing better than better conditions for the same kind of service that you render now.

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V

DUALISM IN MODERN THEORIES OF MORAL EDUCATION[1]

The social and intellectual heritage of the sixteenth century is perhaps best understood in terms of contrasts. The preceding centuries had not succeeded in making unity out of chaos. On the contrary, the various forces which brought about the decay of the Roman Empire had worked themselves out into oppositions rather than into unity. Perhaps the only unifying force was the church, but even within the church the inherent dualism became more and more evident and finally in the sixteenth century destroyed its unity. The origin and history of these fundamental oppositions would carry us back too far into medieval and ancient history. We can merely note their existence and then trace their influence on theory.

1. A very obvious dualism is that of the pagan and the Christian. And yet, as evident as this dualism may seem, it was not at all clearly defined, least of all in educational institutions and practises. Under the influence of humanism the distinction became very much confused; in fact, it was the ideal of humanist scholars like Erasmus that the pagan and Christian elements might somehow fuse. The events of the sixteenth century, however, not only again brought out the distinction but made it a vital issue. The dualism is of course older than humanism; it goes back to the earliest days of the church. The medieval monastery offers a striking illustration. We can see the monks at prayer and worship, performing their duties as Christians; and a few minutes later we may find them in the scriptorium diligently, almost religiously, copying the writings of some pagan

[1] Read before the Divisions of Philosophy, Psychology and Anthropology of Columbia University, April 19, 1916.

author. Humanistic learning not only brought out the opposition within the church, but created a new paganism which set itself over against the church.

Closely bound up with this new paganism was the new faith in human nature, and the pursuit of purely human intellectual activities in contrast to the other-worldliness and contempt for human nature of the church. We find Christian humility on the one side and pagan pride on the other.

2. Not only the Christian, but also the pagan tradition itself was dualistic. Greek philosophy and culture involved the dualism of theory and practise, reason and experience, knowledge and skill, and the still more fundamental dualism in Greek society of freeman and slave, leisure and labor. From this opposition developed that of reason and faith, intellect and will, knowledge and passion, ideas and feelings.

3. Behind all these dualisms lies the social dualism of feudalism, lord and serf, master and servant, possessor and possest. The relation of feudalism to educational practises and theories is more intimate than may be supposed at first sight. Humanistic learning was largely dependent on the feudal aristocracy. Just as in Greece, so now in the fifteenth and sixteenth centuries, learning was a possession of a leisure, or at least privileged, class. To be learned, or to be a patron of learning was a social distinction, apart from any practical value of the thing learned. Knowledge like paintings, statuary and the like was a class possession; it was an ornament, something to be admired rather than used. The servile class, on the other hand, had little to do with things intellectual, with learning and knowledge. Their business it was to obey, to carry out their masters' bidding. Obedience was for them the virtue *par excellence*. Knowledge and virtue had little in common; each got along without the other. This is the dualism which is fundamental in feudal theories of moral education; and, as will be pointed out, feudal theories far outlived feudal institutions.

Bearing in mind, then, this fundamental social and intellectual dualism involved in the education of the sixteenth century, the oppositions between master and servant,

ruler and ruled, knowledge and virtue, intellect and passion, theory and practise, and also the pagan-Christian dualism, let us turn to the theories of moral education which arose out of them.

That the end of education is moral is, if not a truism, at least a commonplace. All theories agree in that. The significance of educational movements and theories lies not in their moral end, but in their conception of what morality and character mean and the means to be employed in attaining it. Here we shall find a great diversity of opinion.

Humanist learning and its confidence in human nature brought with it a confidence in the results achievable by education, especially the moral results. The humanists, therefore, were great advocates of education. But education meant to them merely the acquirement of classical learning, plus some physical training, especially military. Their educational efforts are directed almost exclusively to young noblemen, and their schemes of instruction are adapted to the feudal aristocracy. Learning is expected to make a respectable, polished gentleman, and military training to make a good soldier, and these two qualities are all that is needed to make a perfect nobleman. Courage, rather than obedience, is emphasized—except obedience to God. Most humanist theories conceive of God as a sort of supreme feudal over-lord, to whom the young nobleman owes allegiance and obedience, just as the serf owes obedience to the nobleman.

Man is thus viewed by the humanists as essentially a receptacle for learning, and in receiving this learning at the hands of the classical scholar he becomes a real man, a gentleman, a virtuous man. The whole humanist theory and psychology of moral education is quite adequately summed up in the words of Rabelais:[2]

"Freemen, well born, well instructed, associating in respectable company, have by nature an instinct and impulse which always drives them to virtuous deeds and keeps them from vice: this they call honor."

[2] O. Haupt: *Luther und Rabelais*, Langensalza, 1890, p. 30.

The practical results for moral education of this humanist movement were threefold, but all three factors are closely connected. (1) It made the fruits of education a class possession. One could speak quite literally of "having" an education. Learning was one of the possessions, a part of the property of a refined nobleman. (2) It created a purely secular interest in education. Humanism emphasized the human interests over against the superhuman, the worldly over against the other-worldly. It was pagan, tho it tried to hide behind the cloak of religious conformity. (3) It brought about a confidence in human nature. The natural, native endowment of man, which had been slighted and even despised in the middle ages, was made by the humanists not an obstacle in the way of education, but the starting point and basis of it. This led to an almost unbounded confidence in the possibilities of education on the one hand, and on the other to a *laissez-faire* tendency as far as morals were concerned. It was believed that human nature plus a good fill of learning would take care of itself; and this was carried out especially by the Italian humanists to the extent of licentiousness.

Erasmus' hope that humanism might be reconciled with the Christian Church and Christian ideas proved to be vain. The church had allowed paganization to go very far, but that very fact had raised voices of protest and reform. The history of the Protestant revolt is intricate; we must confine ourselves here to the one side which interests us, and note its effect on theories of moral education. On the side of education, the attacks of Luther and his followers took the form of a protest against the pride and ostentation of humanism, against its licentiousness and paganism. On the more positive side it was a plea for the study of Scriptures and religious instruction, as well as for a national interest in education.

Luther was primarily a man of action and not of theory. He found more immediately effective ways of justifying his cause than to work out a consistent theoretical system. Th theories which developed to give intellectual justifica-

tion to the Protestant movement were soon forthcoming. Melanchthon was Luther's soft pedal; he tried to explain what Luther did. He was more of a scholar and less of a propagandist than Luther. He attempted to compromise, and failing in this he attempted to give greater intellectual justification to the Reformation.

The first Protestant, however, to work out a more or less complete and coherent theory was Calvin, who in 1536 published his Institutes of the Christian Religion. It is, of course, impossible here to enter into a discussion of Calvin's theology, but at the same time it is also impossible to separate Calvin's theory of moral education from his theology. Hence we must discuss at least a few main principles of his which bear directly on the theory of education.

We are apt to loose sight of the true significance of Calvin's theory if we forget the practical purpose which it was intended to serve. We have already noted how Protestantism in its educational aspect was a protest against pagan optimism in moral education. The pagan theory was that man could work out his own salvation, that he of his own nature could perfect himself by learning, and that the perfection of his own nature was the end as well as the basis of education. This was attacked by the Protestants as vain conceit, pride and boasting. Hence it is no mere accident that we find as the first question and answer in the Catechism of Calvin:

Q. What is the chief end of man?

A. It is to know God his creator.

And this "knowledge of God" is explained to mean "when he is so known that the honor, which is his due, is rendered him." And it is no accident that the Institutes begin: "True and substantial wisdom consists of two parts, the knowledge of God, and the knowledge of ourselves." The knowledge of the proper relations between God and man, which involved the sense of dependence on God and the obedience to His law, was the goal and motive of all education. The knowledge of God of course meant a

knowledge of the Scriptures; and only when this knowledge was attained was there any insight into human nature and its moral and religious needs.

The outcome of this whole theory is that human nature (which is divided in accordance with tradition into intellect and will) is adequate for purely "terrestrial" affairs, mere animal life, matters of physical and social welfare, but that when it deals with the things of the Kingdom of God, with virtue, righteousness and salvation, it is so blinded and corrupted by the sin which has been transmitted from Adam down, that it is wholly ignorant and impotent except for the few "innate instincts" (the belief in God and in the moral law) which God of His grace has kept alive in human nature. So that: "The origin of all good clearly appears .....to be from no other source than from God alone."

The practical bearing of all this on education might seem to be merely a substitution for "*laissez-faire la nature*" of "*laissez-faire la grace.*" But this was not what it meant to Calvin. It meant primarily the necessity of instructing people of their natural impotence and of the necessity of complete trust, faith in God, and obedience to his will as the only way to gain salvation.

Calvin did not develop the educational implications of this theory, but we find them developed and applied to a great extent in the Port Royal Schools. The following passage from Coustel, one of the Port Royalist teachers, will serve to illustrate this:[3]

"By the word education I do not mean here the care which parents take of their children's bodies, to which nature itself drives them as it does all the animals; but I mean the care which it is their duty to take of their souls, and of cultivating the soul's two principal faculties, which are the intellect and the will: the intellect, in making them learn the *belles lettres*, and the will, in molding them into virtue.....

"Since the intellect is the guide and director of man, it must be enlightened in order that it can guide. It can not do so except by the light which it receives either from sense, or from reason or from faith. It is proper for beasts to guide themselves by sense. It is reason which must guide man. But it is faith which must guide Christians.....

"If the sin of Adam has been so destructive to the intellect of man, how

[3] P. Coustel: *Regles de l'education*, 1687. In I, Carre: *Les Pedagogues de Port Royal*, Paris, 1887, p. 90–92.

much more so to his will! From being mistress and sovereign it has become the slave of his passions; and instead of attaching itself only to God which must be the only object of his love, it has shed itself rashly on the love of creatures, in the multiplicity of which it searches in vain for rest which it will never find.

"One must not wait until age has strengthened these wicked inclinations; but one must begin early to do violence to oneself in order to overcome them. The most fiery steeds are made gentle and docile in time, and crooked trees are straightened when they are young. Why can not, with the aid of grace, nature be conquered, rebel tho it be?"

The most brilliant and famous exponent of the Port Royal education was Blaise Pascal. Tho interested first and primarily in mathematics, he later came under the influence, chiefly thru his sister, of the Port Royal educators and became their champion. His *Pensées*, written about 1660, contain the most consistent and the most ingenious statement of this whole philosophy of education and of human nature.

But perhaps enough has been said already to indicate the significance of this whole movement from Luther to Pascal for educational theory. The two chief points might be mentioned again. (1) A belief in the total inability of human nature and human capacity to achieve its perfection and happiness by its own natural resources. The chief traits of human nature are pride, greed, envy, hatred; the human passions are essentially "natural inclinations towards evil." This conception is not confined to these theorists by any means, but it is due to them that it gained such fundamental prominence in moral education. Its influence on subsequent theories will be noted later.

(2) The other significant feature of this type of theory is the dualism between understanding and will, knowledge and virtue, reason and faith. We have seen how this dualism was involved in Greek and Roman philosophy and in the medieval tradition, as well as in feudal society. In this movement we have it made explicit and fundamental to education; but more than that, and here lies the chief significance of the movement, it relied chiefly on the will-virtue-faith side of the dualism, and depreciated the intellect-knowledge-reason side, the exact opposite of the humanist

emphasis. Reason and knowledge gained by the intellect alone is made subservient and inferior to that higher, moral knowledge, the knowledge of God, which springs from faith and revelation. Only in the latter realm can one speak of true moral education; virtue goes beyond mere "terrestrial" knowledge, and hence beyond the sphere over which reason reigns. The object of the understanding is *belles lettres* and terrestrial knowledge; the object of the will is virtue and moral conduct.

The Protestant emphasis on the discipline of the will on obedience and duty, and the discount of reason and terrestrial knowledge becomes more intelligible when we remember that unlike the humanist learning, Protestantism was a popular movement; it concerned itself with the common people, who were not possessors of knowledge. Nevertheless, the movement is not democratic; it is strictly feudal. The feudal dualism remains intact. The ideal moral relation was exprest in terms of benevolence on the one side and obedience on the other. In the time of Pascal this feudal dualism served the same purpose for the growing French monarchy and the idea of benevolent despotism. The power, knowledge and good-will of the feudal lord is transferred to the national monarch, and the feudal duties become the duty of obedience to the royal law, which has divine sanction.

In the meantime a radically different movement had been developing in the field of natural science. The revolutionary discoveries of Copernicus, Galileo, Kepler and Newton were powerful stimuli to the imagination. Especially Newton had a far-reaching influence in this respect. His conception of natural order, law and harmony was applied not only to astronomy, but to religion, politics, philosophy and education, and thus we find deism, *laissez-faire*, pre-established harmony, and other forms of nature worship developing.

The influence of this movement was confined at first merely to adding a few new studies to the curriculum as further facts to be learned. But already in Comenius we

find the conception of natural harmony profoundly influencing educational theory, and in Rousseau it assumes a revolutionary character.

We have seen how the current educational theory had branded human nature as essentially wicked and as requiring an influx of divine grace for its moral perfection. It is not difficult, then, to imagine what would happen when this theory met the other conception of natural harmony and perfection. The one despised nature, the other worshipped it—a revolution in educational theory was inevitable. This revolution did take place; Rousseau, Pestalozzi and Froebel were its champions. But before it got well under way, and before it was put into practise it became fossilized, so that its practical effect on educational theory was merely a restatement of the old dualism.

Altho we wish to emphasize this new dualism in Rousseau, it would not be just to him not to mention the more positive and revolutionary side of his theory, which has been largely overlooked. Rousseau was an early champion of democracy. His polemic against the French monarchy was not in the interests of a return to primitive nature, altho Rousseau thought the primitive brutishness might be preferable to the present tyranny; it was in the interests of a democracy as he had tasted it in Geneva. These democratic political doctrines of Rousseau were eagerly taken up by the revolutionists and were, to a large extent at least, put into actual practise in the democracy which was established by the French Revolution. Now along with his democratic political ideas, Rousseau also developed democratic ideas on education. He protested against the artificiality, the tyranny, the wastefulness of the traditional education. He tried to base his ideas on the actual physical and mental growth of the individual. And he was thorogoing enough to place his individual in a society which would foster this normal growth, instead of being content with the social tyranny of his time. Consequently Rousseau's moral principles in education can not be understood without a reference to his democratic political principles; or as Rousseau

himself puts it in his *Emile:* "Society must be studied in the individual and the individual in society; those who desire to treat politics and morals apart from one another will never understand either."

Unfortunately, however, Rousseau was trained in the Lockian psychology, which made the mind of early childhood a purely individual and isolated thing. And so, true to his psychology, Rousseau made Emile in his early childhood a pure child of nature, having neither understanding nor need for society. Emile was responsive during his early years only to the stimuli of his physical environment, then later to the stimuli of society, and last of all to those of pure reason.

Rousseau, unlike Locke, was consistent in applying this psychology to education, and hence the first book of *Emile* is radically unsocial and even, due to Rousseau's own temperament and to the prevalent abuses, anti-social. I said this was unfortunate because many of his readers are like one of Rousseau's most ardent critics, Formey, who was so overcome with righteous indignation when he read the first book of the *Emile*, that he could not read the remainder, but immediately began to write an *Anti-Emile*. Readers of *Emile* are inclined to read only the first part, and if they read the rest, they interpret it in the light of the first. It is, however, quite easy to understand this tendency in Rousseau's contemporaries, just as it is easy to understand his own emphasis in this direction, when we remember the social situation at the time. And in the same way we can also readily understand how it came that the practical effect of Rousseau's ideas was to work out the dualism of Nature versus Society.

This dualism was employed by Rousseau as a weapon of offence against the then existent society, but it is not difficult to see how it came to be a formula which served to perpetuate and entrench the old dualism which we have been discussing. Rousseau's opening sentence in the *Emile* gives us the more traditional statement of it: "God makes all things good; man meddles with them and they become evil." It is the

old story of God versus Adam. But in the hands of the nature philosophy of the eighteenth century and deism it was stated in different terms. Nature, *in loco parentis*, became the source of all good, and society, again *in loco parentis*, became the source of all evil.

The old dualism in psychology is also brought in to justify this dualism. Intellect, knowledge, reason are made correlatives with God and nature; and the will, conscience and passion are made correlatives with society and social relations. Man's passions, according to Rousseau, especially his inherent self-love, drive him to society. Reason is too weak to control the passions, and hence recourse must be had to social restraint. This dualism implied for Rousseau, it seems, the necessity of developing the individual reason so that it could control the will and thus make a good social being out of the individual without need of external restraint. But the practical effect was quite the reverse, for Rousseau's readers and pupils, especially the Germans who had less democratic enthusiasm than Rousseau, seized upon the other possible implication, namely, social restraint and obedience to law as a necessary factor in the moral development of the individual.

This tendency may be seen already in Locke, who was a more compromising thinker than Rousseau. In his enthusiasm for external discipline as a means to render the passions obedient to reason, Locke tends to forget that (according to him) the internal control of one's own reason is to be the aim of education, and to make discipline for discipline's sake the aim of education.

For Kant the rule of reason remains the aim of education, but it is something absolute, universal, categorical. It expresses itself in certain maxims which have universal validity and which must be obeyed. Morality consists in the willing obedience to these laws of reason. The ideas of duty and law as universals thus become fundamental to morality.

This twist which Kant gave to Rousseau's dualism of nature vs. society, reason vs. passion, is significant and

far reaching. It made the dualism more absolute than ever by giving reason a universal, absolute character, and subjecting the individual will to it by the moral law of duty and freedom; and it thus assumed a form in which it could be easily exploited by Fichte, Hegel and the nationalists and made to serve an absolutistic instead of a democratic social ideal.

It is scarcely necessary here to point out in detail the development of the absolutistic theory of moral education in Germany. We need merely note that in Germany the state became the leader in education, rather than an obstacle to it. The appeals of Fichte and the others for a system of national education were effective. In Hegel the state became identified with this absolute reason, and it was only as the individual fitted himself into this state that he achieved his moral freedom and realization. What is of peculiar interest to us here about this whole movement is that it presents again the same old feudal dualism, in a national form. The feudal lord has given place to the national state as the possessor, literally, of reason, and the individual citizen, taking the place of the feudal serf, finds his moral law in the form of obedience, faithfulness, and loyalty. The virtue of the state is to furnish the conditions under which the individual can reach his moral freedom; and the virtue of the individual is to allow the state, which is reason, to control him, knowing that only thus can he attain freedom.

Herbart's theory and psychology of education is much more empirical and constitutes a definite reaction against this absolutism. But the fundamental dualism remains, altho it is partially concealed. The two chief parts of education are for Herbart (a) Instruction and (b) Discipline (Zucht). On the side of instruction we have his whole machinery of presentations, associations and ideas which make up knowledge; on the side of discipline and training, which has to do with the will, we find its object to be the formation of virtue and character. The fundamental assumption of Herbart as of all these dualistic

theorists is that virtue (*Tugend*) somehow results from an increase of knowledge, a formal development of the intellect, and from a discipline of the will; but these two factors in human nature are so set off against each other that it is difficult to see how they can possibly cooperate. The "ideas" and "interests" of Herbart are formal and empty and have no direct bearing on practical situations.

It is quite astonishing to see how this dualism has persisted in modern educational theory and still more in practise. Most of our theories of moral education confine themselves either to instruction in ideas about morals, or to the assumption that character will somehow result from the instruction offered in the curriculum, regardless of whether the curriculum is directly and specifically related to moral action.

We have seen how this dualism in modern theories is really medieval. It is a reflection of the dualism of feudal society. We no longer live in feudal society, but our educational theories are still feudal, to say nothing of educational practise. It needs no argument to show the hopelessness of such theories in our present-day industrial democracy. They are as useless for education as a spinning wheel is for modern industry. Our democratic social ideals and institutions are making new and ever more urgent demands on our educational system. Already our educational ideals and theories, and to a lesser extent our educational institutions, are attempting to meet these demands. The moral implications of industrial democracy are finding expression and occasional realization. But to try to put the new wine into the old bottles, tho newly patched, must in the end prove disastrous to both.

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VI

THE CASE SYSTEM OF TEACHING HYGIENE IN GRADED SCHOOLS. II

In a previous article the writer advocated using the case system for the purpose of teaching hygiene in the fifth, sixth, seventh and eighth grades of the public schools.[1]

The term case system comes from the practise of giving out case records for study and recitation rather than lectures or lessons from a textbook. After a case has been given out, each pupil is required to commit himself in writing in regard to the diagnosis, prognosis, treatment or prevention of the case. Then a discussion of the diagnosis, prognosis, treatment, prevention, and an explanation of the symptoms takes place.

The case system has been used heretofore in teaching law and medicine. Previous to the time of the article referred to it had been thought that the minds of children were not mature enough to handle the problems presented by the case system. Such is not a fact. Children get the correct answers to cases quite as often as medical students do when they have had previous cases which were at all similar and a correct answer may be expected. In cases where the pupils fail to make the correct answer in regard to diagnosis, prognosis or treatment, they learn from the mistake and learn the lessons incidental to the cases better than lessons from a textbook because the lessons have better connection. The use of short introductory texts at the beginning of each chapter gives the pupils additional material from which to form judgments without loss to the thought-producing element inherent in this system. Any sort of a fair trial will convince the most sceptical that the children have minds which are mature enough to form judg-

[1] EDUCATIONAL REVIEW, May, 1915.

ments requisite to a successful manipulation of the case system. About ninety per cent of the children gave correct answers in regard to cases which were given out at examination concerning which we thought we had a right to expect a correct answer.

Several advantages of the case system were pointed out in the article referred to. The case system has the advantage over the textbook system in that it both presents a useful body of knowledge and can be employed as a tool for mental development. It furnishes an opportunity for judgment training. Arbitrary memorization is about the only mental faculty which the textbook system exercises. The second advantage, the practical application of the subject matter to actual experience, was pointed out. Knowledge gained from the point of view of life and experience, the point of view from which the cases are taken, can be applied. Knowledge gained from the academic viewpoint is much more difficult to apply. The method of presenting the subject matter in this system allows of repetition without monotony and affords a vital connection for the subject matter. These factors guarantee better remembrance, a fourth advantage. As we mentioned before, at the beginning of a lesson the case record is given out to a class. Each member of the class is requested to commit himself on paper in regard to either diagnosis, prognosis or treatment of the case. This at once gives the pupil a personal interest in the case, and his attention and interest are immediately secured.

Further experience with the case system has only served to strengthen the opinion which we held about it at the time of publishing the last article. Altho in our examinations we asked questions which might be said to begin where questions in previous examinations had left off; that is, we asked questions which not only required the pupils to have certain knowledge but to know how to apply it; despite this fact, the pupils averaged from ten to twenty per cent higher in every grade than they had averaged in previous examination papers the year before. Altho most of the classes were

too large, from thirty to forty in each class, the pupils undoubtedly took more interest in their daily lessons and learned more from them than they had under the old system.

Without any solicitation many of the pupils exprest their appreciation of the new system and all were very quick to realize the change it had made. When it came to examination a great many exprest their surprize that it was so easy to remember the various things which had been taught them.

Since writing the article referred to above, we have made a few changes. It has been found perfectly feasible to use this system in the fourth grade as well as the four higher grades. Children in the fourth grade read the cases, understand them, and are very keen in getting the point of the cases. We have also found a way of using this system in the first three grades.

It has been found advisable to add a text. Teachers use this text instead of the teachers' edition which was advocated in the first article. It has been found best not to use this text as a text is usually used. The case record is given out at the beginning of the hour. Then the entire discussion of case and text is held without the pupils having seen the text at all. At the end of the discussion a summary of the case is made by the pupils. Then the text is given out as a review or a reading lesson. To illustrate, the following case was given out:

"When the new boys were admitted to the military academy it was found that James F. was very clumsy. All of his actions were clumsy. He walked in rather a clumsy way, handled his gun clumsily at drill, and was clumsy when he tried to do things in the gymnasium. He could not dive at all and could not do a handspring or turn a somersault. On the other hand, George T. was very graceful. He walked in a graceful way. He drilled well after he had had a little practise. He was a very good diver. He could do all sorts of dives off the spring board in the swimming pool. He could do a handstand and he

could turn somersaults and do handsprings in the gymnasium."

Each pupil was asked to account for the difference between James F. and George T. in writing. A discussion based on the text which follows was then held. You will see that the diagnosis, cause, treatment, result and prevention of the condition were all considered and the general application of the case made.

"James F. and George T. contrast very well. James F. had a very poor sense of balance and George T. had a very good sense of balance. The reason James F. was so clumsy and could not handle his body in an inverted position was because he had not educated his organ of balance. In that respect he was like a person who had not learned to talk very well; that is, one who had not educated his organ of voice. The organ of balance is the semi-circular canal which makes up part of the inner ear. You will recall that the ear is made up of three parts, the outer ear, the middle ear and the inner ear. The rest of the inner ear is made up of the cochlea or clam shell which contains the organ of Corti. George T. had educated his organ of balance by learning to do all sorts of things that require balance.

"If both semi-circular canals were removed you could not walk without losing your balance. Usually the first training a child gets in acquiring a sense of balance is learning to sit, stand, walk and run. Then comes skating in most cases. Anyone who has ever had skates on knows that they require a sense of balance. Diving, tumbling and work of all sorts on apparatus in a gymnasium also train the semi-circular canals as well as other parts of the body.

"George T. had done all of these things. They seemed to come naturally for him when he first tried them. Probably the reason they came naturally for him was because he had inherited semi-circular canals that were partly trained. It is not uncommon for a baby whose parents have been acrobats or have done tumbling to show a wonderful sense of balance without any training. We have seen a baby who delighted to turn somersaults with a little assistance

from her father and who at the age of ten months when held erect by the legs would stiffen herself out and throw her head back in proper position, just the position that an acrobat would take in doing this feat. The baby had received no training. Probably she inherited the ability from her father who had been a tumbler at college. Consequently, George T. did have a start and for that reason James F. deserves great praise for his improvement. During three years at the military academy James F. got to be quite as graceful and quite as good an acrobat as George T.

"Not only does it make a person who acquires the skill more graceful but better able to control himself. In that way self-control is increased. How well the world's work is done and how much progress the world makes towards forming a better world depends upon how people control themselves."

Before giving out the text a summary of the case was made. The summary of this case was as follows:

"From the fourth case, that of the clumsy boy and graceful boy at the military school, we may learn several general lessons.

"1. The grace with which you handle your body depends upon the education of your semi-circular canals; that is, upon your sense of balance.

"2. The semi-circular canals are a part of the inner ear and are connected with the brain by the auditory nerve.

"3. You can educate your sense of balance by doing all sorts of things that require balance, skating, diving, tumbling and apparatus work in the gymnasium.

"4. Feats that require balance are difficult at first because they are all voluntary; that is, you have to think about every part.

"5. Later they become easy because the cerebellum performs them involuntarily; that is, without any willing on your part.

"6. The sense of balance is partly inherited.

"7. Acquiring a good sense of balance is worth while

because it teaches self-control and gracefulness and is valuable for posterity."

It is desirable to teach hygiene in the first three grades for several reasons; among them the facts that the young pupils need the instruction and that instruction given in the first three years takes just that much pressure off the upper end of the grade curriculum when the pupils can read and the pressure caused by the demand of numerous subjects is greater. Heretofore the only sort of instruction available has been the verbal instruction in teachers' manuals. The textbook system has been unable to make any provision for the first three grades. Verbal instruction has not been altogether satisfactory. By employing the principles of the case system we have attempted to improve on the verbal method. We have used pictures in the first three grades. The picture used is the record of some case in hygiene. Each picture presents a problem in hygiene which the young pupils are led to solve just as the older pupils are led to solve the problem presented by the printed case-record. We have found that the children in the first three grades take a surprizing interest in these pictures and the problems they present and are surprizingly apt in solving the problem and in getting the points of the cases recorded in this way. The exercises certainly employ the pupils' powers of analysis and synthesis and get them to use their eyes in observing as well.

As a result of the discussion which the first article has brought out we find that we have given several wrong impressions. In the first place we have unwittingly given Plato and Socrates credit for the case system. It is perfectly true that they used the case method of instruction in isolated cases, but they did not use the case system. The case method and the case system are two different things.

When Langdell used the case system for the teaching of law he was doing something different from that which either Socrates or Plato did. Langdell took a classified body of knowledge which had been gathered together by the inductive

method and taught this entire body of knowledge by selecting a series of cases from life which would apply the body of knowledge to life. We are unable to find that any one else preceded Langdell in doing this thing. We are unable from any published work to find out that he himself or anyone else has previously grasped the significance of this procedure. The case system represents a new way of organizing knowledge, the double inductive method, a further organization of knowledge than has hitherto commonly obtained. All knowledge gained by the use of the inductive method might be organized and taught according to this plan.

The argument has been brought forward that the case system loses the advantages which an organized body of knowledge possesses. We trust that our observation in regard to the organization of knowledge has answered that argument. Whatever advantage there is in having a body of knowledge concentrated and brought altogether in a small space, we secure by summarizing each subject as we go along. For instance, there will be ten cases which touch upon the subject of eating. At the end of the ten cases there will occur a summary of the cases and a summary of the subject of eating. In that way no possible advantage is surrendered.

From our experience we feel that we are justified in coming to certain conclusions.

1. The case system represents a further organization of knowledge, the double inductive method.

2. The minds of young children in all of the grades of the public schools are mature enough so that the case system can be used advantageously in graded schools.

3. The case system is the method of choice in teaching hygiene.

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VII

ENDOWMENT OF MEN AND ENDOWMENT OF MONEY

THE CASE OF THE CATHOLIC COLLEGE

In the standardization of American colleges there is a rapidly growing tendency to require a definite endowment of all institutions of recognized merit. New York was among the first to give a legal definition of a college. It required a four-year graded course, four years of academic or high school work for admission, and six professors giving their entire time to college or university work.

Pennsylvania (1909) enacted a law which read as follows:

"No institution shall be chartered with power to confer degrees unless it has assets amounting to five hundred thousand dollars invested in building, apparatus and endowments for the exclusive purpose of promoting instruction, and unless the faculty consists of at least six regular professors who devote all their time to the instruction of its college or university classes, nor shall any baccalaureate degree in art, science, philosophy or literature be conferred on any student who has not completed a college or university course covering four years. The standard of admission to these four years' courses or to advanced classes in these courses shall be subject to the approval of the said council." (See *Present standards of higher education in the United States*, by George Edwin MacLean, United States Bureau of Education, Bulletin 4, 1913, page 60.)

Iowa (1912) introduced the following requirement:

"The means of support is defined as requiring a permanent endowment of not less than $200,000, or a fixt assured income or its equivalent, exclusive of tuition, of at least $10,000." Id. p. 61.

But for the beginning of 1916 the endowment has been more than doubled. The "means of support" is defined as requiring a permanent productive endowment of not less than $500,000, or a fixt assured income, exclusive of tuition, of at least $25,000. (Id. p. 62.)

At a recent meeting of the colleges of the State Association in Missouri the University of Missouri urged that no

college be admitted into the organization unless it had an endowment of $400,000.

Probably in the near future every standardizing agency in the country will require an endowment of from $200,000 to $600,000.

Personally, the writer favors an endowment as a necessary requisite for colleges giving academic degrees. Such institutions can not subsist on fees from the student body. The larger salaries of professors, the equipment of laboratories and libraries, the cost of administration, the upkeep of buildings—all these and many minor expenses make it absolutely impossible to conduct a college on the meagre fees of the students. The Harvard Medical School spends yearly over a thousand dollars on each student, altho the tuition is only $225.00; and while academic schools are not so expensive they have outgrown the yearly income derived from tuition. We believe, then, that an endowment is necessary.

On January 21, 1916, at the Chicago meeting of the Association of American Colleges, Calvin H. French of the College Board of the Presbyterian Church read a thoughtful and inspiring paper on the Efficient College. In his introductory remarks he said, "What are the things which go to the making of the efficient college and why are they needed? Manifestly, some of the things which make the efficiency of a college can not be reduced to statistics, however sanctified the statistician. History, tradition, ideals, great personalities are all of the essential substance of college efficiency, but they may not be reduced to percentages or presented in tabular form. Moreover these moral and spiritual elements which are the life of the college require certain very material things for their support. The need of these material things grows more urgent with every passing year. Without forgetting the soul of the college, this paper, therefore, attempts to describe its body in terms of students, faculties, buildings, equipment, endowments. Perhaps the drift of the inquiry is most succinctly indicated by the question: How much money

is required in this beginning of the twentieth century to make an efficient college?"

After a careful study of fifty-two colleges and universities, Professor French concluded that in an efficient college fifty-five per cent of the income should go to instruction, thirty per cent to maintenance and fifteen per cent to administration. Only twenty per cent of the income should be from students, leaving the eighty per cent to be derived from endowment or some other source.

The professor thus summarizes the results and conclusions of his investigations:

"If the facts and the reasoning of the paper are accepted, we are prepared now to give an answer to the question with which we began, by saying that an efficient college having an enrolment of four hundred students should have a faculty of forty teachers, total assets of about three millions of dollars and an annual income of about one hundred and twenty-five thousand dollars. Perhaps this statement will be clearer if put in tabular form, as follows:

Organization:		
Students		400
Faculty		40
Finances:		
Plant, value of	$1,000,000	
Endowment, amount of	2,000,000	$3,000,000.00
Income:		
Students fees, 20 per cent	25,000	
Endowment, 80 per cent	100,000	125,000.00
Budget:		
Administration, 15 per cent	18,750	
Instruction, 55 per cent	68,750	
Maintenance, 30 per cent	37,500	125,000.00
Per student:		
Total investment		7,500.00
Endowment		5,000.00
Annual cost		312.00
Paid by student	62.50	
Met by endowment	250.00	

"Attention may be called to the quantitative relations indicated as desirable between the income from the student fees and the income from endowments. Similar relations are indicated as existing between the three parts of the budget. With regard to the income, it is quite clear that a college

can not be considered efficient while any considerable part of its income is derived from uncertain sources such as annual donations."

"The relation between the different parts of the budget may vary somewhat on account of local conditions. The tendency, however, in the interests of efficiency, would be to increase the expenditure for instruction."

"The conclusion of the whole matter is that the permanent efficiency of a college is dependent upon the amount of its income from endowments as compared with its necessary activities."

This paper of Professor French called forth an earnest discussion. Some were of the opinion that a college of four hundred students did not need an endowment of two million, while others disagreed with minor statements and conclusions. We believe that maintenance would consume about a third of the income, while the remaining two-thirds should be spent for instruction and administration. Under maintenance is included janitors and other employés, fuel, light, repairs, laboratories, library, improvements and insurance. With this general division of the expenditures of a college let us consider the status of Catholic institutions where the professors give their work gratis by drawing no salary.

We have already granted the necessity of an endowment, but we also claim that colleges under Catholic auspices have an endowment of men instead of an endowment of money. In this country, especially during the last decades, generous patrons have given millions to education. By their industry and genius for organization, and often by privileged legislation, they have amast huge fortunes and have given these fortunes back to the people in the form of vast bequests for education. But little of this money has gone to Catholic colleges. While the Catholic laity have given generously to the parochial schools, few of them have contributed towards higher education. As a consequence Catholic colleges, with few exceptions, have no endowments.

How, then, have Catholic colleges been able to subsist? By the generous sacrifice of thousands who have given, not money, but their lives to the sacred cause of education. Were it not for the men and women who devote their lives

to this work without any material recompense there would be few Catholic colleges in the country today.

But it may be asked: "Do not these professors and teachers need food and clothing? Must they not live as the professors in other institutions?" We answer that there must of necessity be an expense connected with every professor in every Catholic college. But in the first place the professors live what is called a "community life," where everything is done to lessen the daily expense. From three hundred to four hundred dollars would be the maximum required for the support of any professor. Most professors give occasional lectures, contribute to magazines or papers, write pamphlets or books, or engage in some work of the ministry. The income from such spiritual or literary labors goes to the college. In a majority of cases this extra income will pay for the living expenses of the professor. Here, then, we have professors teaching gratis and doing sufficient extra work to cover all personal expenses. Granting that fifty-five per cent of a college income is ordinarily spent for instruction, the Catholic college meets more than half its expense by the gratuitous work of its professors.

In the administrative work of a college, embracing that of the president, dean, librarians and secretaries, with the possible exception of the stenographer the labor is given free. This leaves but the maintenance to account for, which according to Professor French is about thirty per cent. Here, too, the Catholic college has exceptional advantages. In most of the teaching orders of men and women in the Church there are members known as "lay-brothers" and "lay-sisters" who enter the community with the avowed intention of devoting their lives to just such work as comes under the maintenance of an institution. Many of these lay-brothers are skilled carpenters, mechanics, engineers, cooks and bakers, who give their work gratis and reduce the maintenance of a college to a minimum. At the Georgetown University, the large Jesuit institution at Washington, D. C., the halls, reception and other rooms are most tastefully decorated. The work was done by a lay-brother with

only the cost of material. The same gentleman is now at work decorating the new Jesuit college at Boston. Some of the orders of the Catholic Church have as members experienced architects who draw up the plans for every new building, and passing from one city to another save the institutions thousands of dollars.

The Catholic nuns who teach the parochial schools draw a salary of from twenty to twenty-five dollars a month. Living in community and practising great economy they are able to live on this low salary. These teaching sisterhoods preserve the same economy in their high schools and academies.

To show what can be accomplished where many are banded together to give their lives to the cause of education the writer can point to a Catholic Sisterhood. About sixty years ago a few devoted women of foreign birth received a small bequest of land in the middle west. They lived in a miserable cabin and with their own hands cleared away the forest for cultivation. With their own hands they tilled the soil, in the meantime teaching a few children of the neighborhood. In a short time candidates came from American families. The community grew and ramified. It now has schools and academies thruout the middle west. The little cabin is still preserved as a sacred souvenir of the past. Visit the place today. You will find magnificent buildings surpast by few institutions in the land. You will find everything which goes to make up the appointment of a modern school. What has wrought the change? The devotion of a thousand nuns—a thousand nuns teaching in parochial schools and academies and turning back to the mother house their meagre earnings. There have been no large donations, no endowment; but the steady income of a thousand nuns each contributing to the common support of the central house has done what an endowment of a million dollars could never have accomplished.

The writer can recall among other striking examples that of a religious community of men who came to the west without resources of any kind. They bought a tract of

land and material for building on credit. In this community were skilled carpenters, masons and even an architect. If the government or public erected the building which this community now owns it would cost a million or more. It contains shops and printing presses; it is enabling hundreds of young men to get an education at a minimum cost; it is preparing candidates for foreign missions; and sending forth numerous books and pamphlets from its presses. Again, personal sacrifice to education has taken the place of rich endowments.

There are Catholic colleges, then, where the instruction costs practically nothing, the administration but a tenth part of the ordinary college, and the maintenance is reduced from one-half to one-third. There are Catholic colleges where from seventy-five to ninety per cent of the ordinary expense is met by the devoted labor of members of the teaching order. Tuition will more than cover the remaining expenditures. We believe, then, that we can claim with justice that the Catholic colleges have an endowment of men which in every respect takes the place of an endowment of money.

Some of the smaller Protestant colleges claim that they approximate this advantage of the Catholic colleges because their professors are willing to teach for a small salary. They can point to instances where professors, who have been offered three or four thousand dollars a year, prefer thru devotion to a special denominational college to remain at their post and teach for fifteen hundred or two thousand dollars a year. We have not the slightest doubt that many of the smaller colleges can claim devoted professors who could reap a greater financial reward by working in other fields. We do not, however, admit the full parity with Catholic colleges, for in these latter the professors not only do not draw a small salary but they cost the institution absolutely nothing in the way of recompense. Moreover, if the professor in any of these denominational colleges is able to make an extra income by writing, lecturing, or engaging in work of the ministry, it remains his for the sup-

port of his family, while in Catholic colleges this extra income goes to the college fund. While some denominational colleges enjoy advantages from the fact that their professors teach for a small salary, this advantage can not be compared to the conditions in the Catholic colleges where work is given absolutely gratis.

One essential thing about the income of any college is that it should be dependable, something that can be relied upon from year to year. Therefore, an occasional collection in a number of churches of any denomination could not take the place of an endowment, for the simple reason that it is fluctuating in its character and depends upon the good-will of those who give, but who have not promised to contribute definitely. Is this endowment of men and women in Catholic colleges dependable? Can it be relied upon for the future? Has it the element of perpetuity? Before answering the question we wish to state that no endowment, howsoever carefully invested, can be relied upon with positive certainty. Buildings depreciate, localities change, stocks cease to produce a dividend, bonds lose their value, insurance companies and banks fail. Some years ago the Johns Hopkins University lost a million dollars invested in what seemed the very best of bonds. In fact, every college must expect to find its endowment fund to fail in some respect to bring in the theoretical value. There is no indication pointing to a shortage of professors in Catholic colleges. The teaching communities of men and women are steadily gaining in numbers and opening new institutions. The system has worked for fully fifty years and has shown all the elements of dependableness and is strengthening itself. It is in fact more reliable than any endowment of money, invested with all the guarantees of the best methods of finance.

One of the greatest financial difficulties for the college today is the care of its superannuated professors. Even in the most highly endowed colleges few professors can put aside enough to safeguard against the pressing needs of old age. The professor has social demands, he must travel,

be a member of scientific or literary societies; he has many calls upon his purse, and even with economy can put aside little for old age. Altho the institution is not responsible for the care of the professor once he has been incapacitated on account of old age, most colleges feel an obligation to pension the retiring professor if possible. When Andrew Carnegie wished to give his millions to further education it was represented to him that the most effectual way would be to establish a retiring fund. If those devoted to the cause of education could feel assured that their wants would be provided for in their old age, more would be willing to enter upon the duty, while those in service would be relieved of the anxiety for the coming years when their days of usefulness were past. The Carnegie Foundation became a pension fund. It encourages the present workers by promising to provide for the future.

Do Catholic colleges take care of their superannuated professors? One of the most consoling and encouraging considerations in the life of the Catholic teacher is the certain knowledge that in his old age his wants will be provided for. He need not worry for the future. When his days of usefulness have past, ready and willing hands will be at his service. In some college of his order a private room will be provided for him; his meals, clothing and all his other needs will be attended to. He will want nothing; and even luxuries which were denied him in his days of service will be given cheerfully in his old age. If sickness comes, no expense will be spared. But it may be asked: "Is not all this an extra expense which will tax the already meagre income of the Catholic college?" In answering the question we must remember that there is not here the difficulty of providing for a family but only for an individual; for one, too, who has been frugal in his habits and whose needs are few. In most institutions when the professor can no longer teach or lecture it is impossible to provide part work or to find other fields of usefulness; whereas in the Catholic teaching orders some light administrative labor or work of the ministry can be found such as pays the

living expenses of the retiring professor. In fact, the care of the aged professors in the Catholic scheme of education costs so little that it is a negligible quantity in the total expense.

The points put forth in this paper were explained in 1914 before the Federation of Colleges of Illinois. As a consequence the following resolution was introduced and past unanimously:

> "In order to qualify in the first group, a college or university be required to have in addition to the other requirements for membership in this Federation, a minimum of unencumbered, productive endowment of $200,000 or an assured income of at least $10,000 in addition to tuition and fees, *taking into account the entirely gratuitous services* of professors in certain institutions giving their full time to college work."

A very recent Report on Catholic Institutions, by a committee of the North Central Association, March 8, 1916, reaches the same conclusion.

"These (Catholic) teachers do not receive any pay and have no private contracts with the institutions but are under the general control of the orders to which they belong. Many of the institutions undoubtedly receive in this way services that represent a large endowment. The members of the orders are trained by long courses which they pursue before admission to the order, so that the services rendered in these institutions can unhesitatingly be accepted as representing a large money value.

"Furthermore the permanency of policy within the institutions is guaranteed by the control exercised by the religious order. Comment will be made later in this report on certain gradual changes in policy which are evidently being worked out in these institutions, but in the main it may be said that their policies do not change greatly from year to year. The grounds for demanding an endowment in these institutions seem, therefore, to be relatively slight. In the judgment of your committee it would be entirely proper to accept as a substitute for endowment a statement of the services rendered by religious orders. Where the institution has a considerable number of members of the faculty it would seem entirely legitimate to compute the

services of these instructors as the equivalent of income from endowment."

We believe that the Federation of Colleges of Illinois and the Committee of the North Central Association viewed the matter in the proper light. In the standardization of colleges, wherever an endowment is one of the requirements, we believe that due credit should be given for an endowment of men as well as for an endowment of money.

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VIII

DISCUSSIONS

WHAT IS OUR AIM?

In its March, 1916, number, the EDUCATIONAL REVIEW published an article of mine entitled Are Our Schools Hitting the Mark? The object of the article was to point out a distinct danger, that of neglecting the building of character, of all attributes the most vital to both individual and society. It attempted to show that misplaced emphasis in the schools was, in part at least, responsible for distorted ideas of right and wrong on the part of many of our young people. In the following I wish to pursue this idea still further, and at the risk of being revolutionary or heretical, to discuss another question along the same line, namely: What is this "mark" at which we are aiming? Is it the same as it was a few decades ago? Has our conception of it changed, or have we been led astray in our aim as years have past? Certainly the question is important.

If we look back to the beginning of schools in America we find two main thoughts in the minds of the early founders: First, that of moral and religious enlightenment; and second, that of instruction toward practical ends. Boys and girls must be able to read, else the Bible and the books of the day, very few in comparison to the present and mostly moral in tone, would be sealed to them; a boy, at least, must be able to write and cipher as part of his preparation for any business dealings. Thus far it was the intention that all should advance. Beyond this simpler education grew up the higher school or the academy, not so much for all as for the few, selected either because of aptitude or financial position. This school gave almost exclusively a training for college, consisting mainly of literature, mathematics and the classics. The work of the college itself was pretty closely limited to the preparation of teachers, lawyers,

ministers, and later doctors, and to such education as befitted gentlemen of independent means. It will be noted that only the first of these three types of institution was for the masses (if this term may be used of the scattered population of those times) and that so far as the masses were expected to go, the program was based directly on practical community welfare; the other types, with their high ideals of scholarship, were mainly for a select group.

Today these conditions no longer exist. More and more the high school, which supplanted the academy, is getting to be looked upon as the natural climax of a public school education, and is becoming a school of the masses. To be sure, this degree of education is as yet far from universal: still, the trend is in that direction, and there no longer exists that selection or weeding out of material present in the earlier days. Boys and girls of all sorts of aptitudes and inaptitudes are found within its walls and must be encouraged to stay there, we believe, for their own good and that of the community.

But with this growth there has not yet been a corresponding adaptation of the aims of this type of school. Still, as in the past, the ideal of scholarship predominates in the minds of parents, pupils and school authorities, excluding a few advanced thinkers. The influence of the college, and of college-bred teachers, tending to set certain scholarship standards, was too deeply rooted in the schools of a quarter or a half a century ago to be easily displaced. Upon these standards elaborate systems of grading have been built up, so universally employed that they have come to seem almost as essential as the school itself. The great advances of social import, the "steamer class," the vocational or prevocational school, the playground, the school visitor, school nurse and physician, the vocational guidance movement, juvenile and newsboy courts, the cooperation of clinic and school, backward and ungraded classes, and numerous others, have been but extras, added on one at a time as occasion demanded, but without influencing the main traditionary purpose. And still our problems, far

from being solved, are becoming increasingly more complicated, if not more hopeless of solution, along our present line of effort.

Society, too, has changed. The congestion of cities and the cosmopolitan character of their population have increased; home life and parental influence have in almost equal measure lessened, especially among factory workers and the children of illiterate immigrants. The weaker and less desirable, as well as the stronger and finer, traits of the various incoming races have appeared in their American-born children, but without the strong control exercised, perhaps sometimes rather too severely but none the less effectively, in other countries. For all such young people of this cosmopolitan society, with their peculiarities of custom and temperament, the city school is as truly a melting-pot as is the nation or the city at large for their fathers.

And what is the product which we wish to have come out of this melting-pot? A company of scholars? I venture to say not, but rather an army of young citizens, trained to be industrious, upright and reliable in whatever situation they may be placed, and inspired with the spirit of service to their neighbors, to the community and to all that is best and highest in humanity. If with this can go training of eye, ear, hand or brain, so much the better, indeed it should be so, but not the latter without the former, and not necessarily a training within our present limited scope.

For these reasons I believe that the time has come when we can no longer satisfactorily graft new branches on the old stem, but must go back to the roots. The position that our general schools today exist mainly for scholarship seems to me no longer tenable. We can not, and do not want, primarily, to make book worms out of the rank and file of our pupils, who must go out early into the industries. More and more we find parents recognizing a wider value in the schools than this, in expressions like the following: "I know my boy is not good in his studies; I do not expect him to pass. But I want him to have the benefit of staying in school to keep him off the street, to prevent his falling

into bad company, to keep his mind occupied with good things, and to get him interested along some line, if possible, until he is older and better able to go to work." And the sooner we admit that this is part of a school's legitimate task, and cease to place our main emphasis officially on scholarship, instead of on individual self-development, the better. If we are truly to educate, i. e., bring out the best that is in a pupil, we must view him as a whole personality, and not so much as a mere potential scholar.

Many of our present most troublesome failures are not in reality hopeless cases; they are merely misfits in our present system. If these can be made into good masons, painters or plumbers they can do men's work in the world, rendering real community service; even in the less skilled occupations they can earn an honest living and command respect. Yet they know no other ideal than that of book learning. One of the most capable and self-reliant boys that I ever ran across, in all probability, so far as caring for himself in the world goes, was so poor at books that at the age of sixteen he failed to do satisfactory work on entering the high school. Yet with dogged persistence he appeared again at the doors of a grammar school to try to work up to the requisite standard—an almost hopeless waste of time and effort, but a magnificent showing of spirit.

This plea of mine should not be understood as bringing with it any intimation of a disregard for scholarship *per se*, or any belief that such a change would bring about its decadence; on the contrary, with a changed point of view, I believe we should have on the whole a scholarship of higher quality than we do now. But it would be on the part of those with scholarly aptitude, and would not pretend, as at present, to be the universal aim.

Some very notable and promising efforts along this line, many of them necessitating no extra equipment, are already being made. For example, credit is being given in certain schools for home duties well and regularly performed, for living out the principles of hygiene taught in the schools, for special studies such as music pursued outside, not to speak of all kinds of introductions within the schools them-

selves to widen the sphere of contact between the pupil's mind and world conditions and occupations. It is in response to the same idea that the industrial schools and courses have appeared, that cooperation has been established between schools and industrial plants; that social centers, debating clubs, citizenship classes aiming toward naturalization, have been incorporated in the public school body. And yet, so far, these are either in exceptional and isolated school systems or are considered of value mainly for exceptional types of pupils, not for the rank and file. It is because the average school has not accepted this type of life preparation as one of its responsibilities toward all its youth that the need has come for boys' and girls' clubs, junior municipal leagues, the Boy Scout and Campfire Girl movements and the settlement work in such great measure among children. Thinkers outside the schools have recognized this need. The truth is that much of the training which the Boy Scout movement, for example, seeks to give, both in moral ideals and in ability to use hand and brain intelligently, will probably be of far more practical value thru life to the average person than a great deal of the material of the standard school curriculum. As much could probably be said of similar organizations, for girls as well as boys, all of them working under difficulties because of unsalaried workers—volunteers with a noble purpose and a splendid spirit, but often without thoro training and with insufficient time at their disposal.

In these days of complex society it takes more than the original "three R's" to prepare young persons for life to the relative degree that the early schools prepared them. The aims which our fathers held clear, however, have not been improved upon thru all the intervening years. Ought we not, therefore, while ever seeking to keep wide open the door of progress toward that realm of education more distinctly esthetic and "cultural" still transfer our main emphasis back to those ideals of good character and useful citizenship set forth at the beginning?

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THE ORAL EXAMINATION OF THE DOCTOR OF PHILOSOPHY

Is the oral examination of the candidate for the degree of doctor of philosophy anything more than an empty form? Does it count in the academic record of the student? Does it reveal, regarding the learning of the candidate, anything that could not better be discovered by written examination? These questions are asked by aspirants for the degree and also by those who, having past the examination, discuss with bitter irony the values and the significance of the inquisition to which they were subjected. Nothing else in the prescribed routine of graduate work is so suspected of being a mere academic bubble.

Is it not true that the keenest, the most promising students, those most likely to advance scholarship, are the ones who question with greatest severity the meaning of this superstitious adherence, on the part of universities, to an ancient barbaric rite? Their protest comes not from any desire to evade work, but from a sense of the indignity and the unfairness of a situation where the judges are also the jury, the prosecuting attorneys, and the audience; where the victim is isolated, and, for a series of hours, is made to undergo a nerve-racking experience. In the presence of men with whom he has worked, a student is asked, point-blank, any question that his examiners may consider germane to the subject in which he has specialized. How would any one of the examiners like to have the tables turned and the candidate be permitted to ask him just one question? Is it not conceivable that a situation might be brought about decidedly humiliating to the professor? And does not the advanced student suffer a kind of moral as well as intellectual humiliation in being thus subjected to a comparatively public clinic? A boy in the secondary schools may suitably be brought before a board of examiners, but a man or woman of mature years is made ridiculous by this ordeal, no matter how genial or how considerate the examiners may be, nor how successfully the candidate gives his answers.

Aside from harrying the candidate, the oral examination is a lapse from the dignity of scholarship. For three years a student has been at work trying to learn the ways of the true scholar, reading, preparing papers, having many interviews with his teachers, and finally devoting his energies to the examination of the subject upon which he writes his thesis. He has gathered information as it bore upon the special subjects he was investigating, but the most important part of his training has been his education in critical method. The doctorate in philosophy is not synonymous with encyclopedic knowledge. Ideally, it should mean that its possessor has been daily becoming more precise, more vivid, more profound in his thinking. Development of individual resource, of individual power and initiative, of individual loyalty to truth, and a gradual sense of independent strength should be the mark of the doctor of philosophy. Having been taught that facts themselves are significant chiefly as they relate to ideas, having been trained to scorn the haphazard and inconsequent, a student is brought at the supreme moment of his academic training before the board of examiners. Is this examination a test of his scholarship, a trial of his thinking capacity, a probing of his fertility of thought or of his depth of comprehension of ideas? Not at all; it is a game of twenty questions played by a group of learned men at the busiest season of the year, when they can ill afford the time, the temper, and the strength for such a pastime.

Each examiner may quiz the candidate in the examiner's own special field. Take as illustration the department of English. One hears that there may be propounded a series of questions that may touch, now certain paradigms in Gothic grammar; now a fact relating to the history of the novel; now a date, or a theory of date, in Shakespeare's work; now a problem in regard to Coleridge's criticism, or a question about the plot of some Jacobean or Restoration drama. There is no semblance of unity or coherence. The examination is miscellaneous, desultory, an exhibi-

tion of intellectual vagrancy. What is being tested—the student's memory of facts, his mental dexterity in leaping from one subject to another utterly remote, or his power of self-possession under trying circumstances? If the oral examination is merely a mechanical effort to see if a student has acquired an adequate amount of information, why dress it in such portentous fashion with academic circumstance? Is there not a distinct anti-climax in making a ceremony out of a matter of business that might better be achieved by written examination? If the oral examination meant that a student would be asked to defend a thesis, if he were to attempt argument with his examiners, so that they would get an impression of his real thinking power, his resources and knowledge, that might justify the procedure and do away with the crudely kindergarten methods that are in vogue at present.

In the Middle Ages the oral examination was a necessary and desirable part of academic discipline. The student who presented himself for examination had probably been an itinerant scholar, and was not known to the examiners as are the students today when two years of residence at the university are required. With the great numbers of medieval students and the small number of teachers, the individual student received almost no attention, while today the candidate for the doctor's degree has been under the constant supervision of his professors. The oral examination tested a medieval student's knowledge of Latin, his readiness in speaking, and thus had a significance which it lacks at present. Nothing need be said of the differences in the sheer amount of knowledge possible to a student before the Renaissance and the almost limitless scope of today. The controversial element played a striking part half a dozen or more centuries ago. The candidate showed his skill and acumen, not by a written thesis but by defending a position, and his reasoning powers, his sturdiness of intellect could be challenged, stimulated, and tested by the ordeal. Finally, with abundant time and with a natural predilection for external pomp and

ceremony, the examiners, in the Middle Ages, doubtless enjoyed the opportunity of overawing the applicants for any degree. Can it be possible that the oral examination of today is a last desperate endeavor to impress the candidate with the spectacle of Academic Authority? Since so many professors frankly question the values of the oral examination, why do they let it continue to express the educational ideals of our universities?

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IX

REVIEWS

The Carnegie foundation for the advancement of teaching—Tenth annual report of the President and of the Treasurer. New York: October, 1915.

The tenth annual report of the Carnegie Foundation for the Advancement of Teaching for the fiscal year ending September 30, 1915, shows a total endowment of $15,379,000. The income received during the year was $748,193.04, and the annual expenditures were $767,486.40. Of this amount $38,127.81 was spent in administration and publication, $54,633.62 in educational enquiry, and $674,724.97 in retiring allowances and pensions. During the year 23 additional retiring allowances and twenty widows' pensions were granted. The total number of retiring allowances now in force is 327; the total number of widows' pensions is 118. The total number of all allowances granted since the beginning of the Foundation's activity is 639, the expenditure for this purpose having been no less than $4,226,518.66. The annual assumed load for all allowances at the end of the year is $690,668. No additions were made during the year to the institutions on the accepted list, which stands, as it has stood since 1912–13, at seventy-three.

An important action taken by the executive committee was the decision that if a school or college which had been part of an institution accepted by the Foundation should become an independent institution, it would then have to make a new application for admission to the accepted list. It was also decided that since the income of two and one-half million dollars is now used in the allowances already granted to persons not connected with institutions on the accepted list, it is unwise at present to add to these obligations—action that in view of the fact that it was intended by the Foundation to constitute a pension system should doubtless have been taken at the beginning.

The remainder of the report is devoted to the work of the division of educational enquiry, to a discussion of pensions in general, and to the deaths of beneficiaries during the year. The detailed report of the treasurer as usual is appended.

In educational enquiry the principal event of the year was the publication of the special report prepared by Professor Josef Redlich of Vienna on The Common Law and the Case Method in America, issued by the Foundation as a preliminary part of the study of legal education undertaken at the request of the American Bar Association. At some subsequent date, says the present report, an attempt will be made to summarize the various comments on the Redlich report received by the Foundation, which in the meantime is continuing the work of visiting and studying the law schools of the country, a comprehensive report upon which will ultimately be made. An appended list of the law schools in the United States shows 138 resident schools conferring degrees; 10 resident schools not conferring degrees; and 17 correspondence schools.

The study of engineering education, undertaken at the request of a joint committee of the six national engineering societies and conducted with their cooperation, has also progrest. The history of the establishment and development of engineering education in the United States, says the summary, has been traced, the experience and judgment of several thousand engineers have been drawn upon to estimate present conditions in the profession as these might affect the schools, the records of student apprentices in several large corporations have been compared with the school records of the same men, some twenty representative engineering schools have been studied minutely, and a group of psychologists and engineers is endeavoring to develop a series of tests which may provide an improved means for judging engineering ability at the student's entrance upon and completion of engineering training.

During the year, the Foundation has also been gathering material for the study of the training of teachers in Missouri,

undertaken at the request of the governor of the state, the state superintendent of education, and one hundred representative educators, with the well-founded idea that the results obtained will be of value at large, as well as within the state directly concerned.

The report further presents a summary of the gratifying legislative results of the study of education in Vermont, made by the Foundation at the request of an educational commission of that state in 1913, and published that year as the Foundation's seventh bulletin.

The part of the report dealing with educational enquiry ends with a detailed study of the charges for tuition in one hundred representative colleges of the country during the last ten years. The conclusion is reached that the charge made for tuition has increased by about one-fifth during the decade in question. The tendency to increase was active ten years ago, but was checked by the general financial disturbances of 1907. Since that time it has developed steadily, so that the last four years represent more than half of the advance during the decade. In detail, fifteen of the one hundred institutions, all with the exception of Leland Stanford University supported by public funds, report no charge for tuition at any time during the ten years. Twenty-nine other institutions made no change in their charges. Of the fifty-six that have made some change, three—Knox College, Earlham College, and the University of the South—reduced their tuition charges. In the remaining fifty-three institutions the changes that have been made are variable, and bear on the whole but little relation to the initial charge. The most frequent increase of all is 25 per cent, the median 30 per cent, the average 36 per cent. The most promising element in the situation, according to the report, is the tendency toward inclusive fees. That system, it is concluded, is probably the most satisfactory which bases the charge upon the hours of instruction taken by the student. When to this there is added an inclusive fee for all other items, all of the demands of a simple and adequate system appear to be met. To quote the report,

which thus summarizes the whole, "the tuition charges of our representative institutions have increased during the last ten years from about $80 to about $100 a year, and the tendency to advance fees is increasing. More than half of the institutions reporting have increased their fees, most frequently by about $25. Some institutions have made several changes of about $10 or $15 each. State institutions that make no charge for tuition do, however, make considerable incidental charges, and such charges are made by other institutions in addition to the tuition that is charged. A considerable number of institutions are modifying their practise, because of the belief that the student's obligation will be clearer if all of these charges are grouped in an inclusive fee, which also covers tuition on the basis of the number of hours of instruction that are taken."

A considerable part of the report is devoted to a discussion of pensions for public school teachers, and for university professors, clergy pension funds, and industrial pensions, accompanied by a carefully compiled tabular statement of industrial and institutional pensions and teachers' pension systems. A study of sixty-five pension systems for teachers in the United States, says the report, shows the movement for such pensions is recent, but widespread and still extending. Since the last report of the Foundation, twelve states have considered the establishment of state pensions for public school teachers. In eight of these—Illinois, Indiana, Michigan, Minnesota, Montana, Nebraska, Nevada and New Hampshire—systems have been established; in four—Connecticut, Iowa, Pennsylvania and Washington—the proposed measures failed of enactment; in the last-named state the bill, which was past by the legislature, was defeated on a referendum to the public. At the present time, it is interesting to note, Connecticut remains the only New England state without a state-wide pension system for her teachers. Generally, the report continues, the systems are administered by special boards, in which the teachers constitute a majority. Provision is, as a rule, made for retirement on the basis of service

and of disability, but usually only for teachers entering the service after the establishment of the system. Funds are, in most cases, provided by teachers' contributions and by public appropriations in approximately equal amounts. Only one of the eight systems enumerated above, in fact, is based on the non-contributory principle—a condition, explains the report with conviction, that may offer some guaranty that sounder principles will in course of time prevail in the whole matter of pensions. In the meanwhile, however, the various systems follow the same pattern. The funds arranged for are frequently insufficient to pay the pensions that have been promised. "Despite the increased attention given to the subject, notwithstanding the numerous criticisms of prevailing practise on theoretical grounds, and regardless of the many instances of practical failure in recent years, pension legislation pursues its wonted course. Seldom is there any evidence of expert assistance. Too many of the plans adopted—and this statement applies not merely to teachers' pensions—appear to be inspired by a desire to launch a system somehow, relying on a secret and indefinable hope that Providence or the public treasury or the wealthy philanthropist will not permit the poor pensioner to suffer." Our general experience with teachers' pensions, none the less, the report explains, is still very brief. The first system to be established in the United States appears to be that of Chicago, which was inaugurated in 1893. Nearly half of all of the systems, however, have come into existence since 1910. There are now state-wide pension systems in twenty-two states and local systems in ten more. More than half of the states, accordingly, are represented in the movement.

In a short review of New York City pensions the insolvency of the Public School Teachers' Retirement Fund is noted and the statement is made, which we all know to be true, that it was never on a satisfactory financial basis. The Pension Commission appointed for the particular purpose of clearing up the situation in New York continues its work of investigation and research, which should be com-

pleted during the forthcoming year with the result of a new pension system established on sound actuarial principles and adapted to the needs of the situation.

Under pensions for university professors the report notes the establishment during the year of their own systems of retiring allowances and pensions in the University of Nevada, Ohio Wesleyan University, and the University of Saskatchewan.

Significant of the progress of the pension movement, continues the report, has been the recent adoption of the idea by a number of religious denominations, and during the year scarcely any synod or conference, or other assembly of church representatives, has lacked a discussion of the subject. The development of industrial pensions, too, continues to grow. The accompanying summary suggests, however, and that is the conclusion of the report, that like the teachers' systems they are practically in the end unsound.

There is less direct criticism, constructive or destructive, in the present report, with the exception, perhaps, of that in the discussion of pensions, than is contained in many of its predecessors. This is largely due, however, to the fact that several of the recent undertakings of the Foundation—the study of legal education, of engineering education, and of the training of teachers in Missouri—are still in process of investigation and no full report can yet be rendered. The publication of the Carnegie Foundation report, nevertheless, no matter what its specific contents may be, this year and every year is an element in the critical discussion of the vital educational questions of the day that must be taken into active and serious consideration.

WILLIAM H. CARPENTER

COLUMBIA UNIVERSITY

The American college—By WILLIAM H. CRAWFORD. New York: Henry Holt & Company, 1915. p. XI–194.

The American college is, to quote its sub-title, A Series of Papers Setting Forth the Program, Achievements, Pres-

ent Status and Probable Future of the American College. These papers were read at a conference held on the occasion of the celebration of the one hundredth anniversary of the founding of Allegheny College and were prepared for this particular event. Thanks presumably to President Crawford, the entire program was carefully drawn up before anybody was asked to read a paper and those who were asked were, fortunately, selected with equal care. As a result, the collection makes a real book, and Dr. Crawford's claim in the introduction that it presents the freshest and most comprehensive thought on the American college is not without justification.

The first paper is by President Faunce, of Brown, on The Aim and Scope of the New England College. This contains much interesting and unhackneyed historical material, and, written as it is by a clergyman, its discussion of the relation between church and college is significant.

The second is a brilliant essay by Professor Shorey, of the University of Chicago, on The Place of the Languages and Literatures in the College Curriculum, from which may be taken the following characteristic statement: "Language is the indispensable key to literature. I intend no illiberal disdain for translations, popular lectures, and other substitutes for the best. But it can not be the chief office of the college to obliterate distinctions and solicit the customer to content himself with something 'equally as good.' Phonographs and chromos have their uses. But the hearth of scholarship and culture is not the place for the gas log." Or, the following: "Truisms may be staled by repetition. They are not, as some epigrammatic prophets of the up-to-date fancy, thereby converted into falsities."

The third paper is by Dean Haskins, of Harvard, on The Place of the Newer Humanities in the College Curriculum. In this he points out what is hard to realize today, that history did not win an independent place in our colleges, with a few notable exceptions, until well after the Civil War; that economics secured a foothold somewhat later, and political science later still. In his plea for an even

greater devotion to the subjects of this group than is now made possible in the better American colleges, Dean Haskins points out that the present European war "finds us as a people extraordinarily ignorant of history, of international law, and of those economic conditions which shape international policies; and it finds us even more deficient in an international habit of thought and in the sense for foreign affairs. In the formation of an enlightened, just, and farsighted public opinion in international matters the colleges must take the lead." On the other hand, the author recognizes and points out the obvious danger in the overemphasis of the immediate and the actual, and that the social sciences must be approached, not as material for a momentary sensation or occasional debate, but as requiring thoro study and hard thinking, and as needing to be seen in their larger relations to human experience. Another warning is important in these days of education by the "accumulation of isolated credits," the distinction between such subjects as mathematics and some of the branches of science where there is a progressive correlation inherent in the nature of the subject, and those where, as in the more descriptive fields of English literature and history, the order and advancement of courses is more or less fortuitous and the later courses do not depend upon the earlier in any such close sequence of necessary prerequisites." In his concluding paragraph, Dean Haskins states that "the great defect in American college education is that it does not set the mass of students intellectually on fire. Our colleges are only in an imperfect degree intellectual institutions. The real rivalry is not one between classics and sociology, between history and chemistry, but a struggle with ignorance, materialism, and superficiality for the development of the intellectual life."

Professor Conklin, of Princeton, follows with a thoughtful and important essay on The Place of the Physical and Natural Sciences in the College Curriculum, which has the rather rare merits among the pronouncements of professors of science of not claiming too much and of proving what it

claims. Professor Conklin summarizes the contribution of science to civilization as follows: "The emancipation of man from various forms of bondage, particularly the emancipation of his mind; an enormous enlargement in the field of man's thought; and, finally, a change in our whole point of view as to nature and man, with the result that science can not be eliminated from any system of education which strives to impart culture."

President Rhees, of Rochester, presents a paper on The College as a Preparation for Professional Study, which, like that of President Faunce, gives much useful historic information, and follows it by wise comment based on this historical knowledge and on much practical experience. In his judgment, "the American college contributes to preparation for professional study an influence for intellectual maturity which no other agency has to offer," and with it a "developed intellectual instinct against rash generalizations and against over-confident logical conclusions." It gives, also, a facility of "translation," as the author terms the ability on the part of leaders in professional life to convince and lead what may be called "lay" opinion.

The College as a Preparation for Practical Affairs is discust by President Thwing, of Western Reserve. President Thwing believes that the four qualities most needed in practical concerns today are judgment, energy, tact and patience, and in his judgment "the college helps to construct these foundations upon which the four-square house of business is built, if the college graduate in this materialistic age serve that age by being an idealistic materialist."

Commissioner Finley, of New York, deals, with that lightness of touch of which he is master, with The Present Status and Probable Future of the College in the East. It would not be strictly true to say that he sticks very closely to his text, but this furnishes no reason for neglecting to read the present essay, or anything else that Dr. Finley may write.

President Few, of Trinity College, Durham, discusses The Present Status and Probable Future of the College in

the South. What he says about the too exclusive use of the scholarship tests (as contrasted with personality and teaching skill) in the selection of teachers is particularly true of the South in the present period of unsettlement and rapid change, but the evils of its exclusive use as a basis of appointment and promotion, are not confined to any one district in the country.

To President Slocum, of Colorado College, was assigned the corresponding paper for the College in the West. It was in the West particularly that the opinion was promulgated a few years ago that the day of the college had past; that it was to be crushed between the upper and nether mill-stones of the secondary school and the university. "The men who agitated this conception," says President Slocum, "have either disappeared or for the most part have past into silence, while the leaders of the college movement are standing with independence and self-respect, unmoved, courageous, and hopeful, declaring that the college is just entering on its largest mission and its most important work." In the present advocacy of the so-called Junior College, the author sees a new form of attack upon the typical American College and he demands that the college should take no secondary place in the educational movement, nor step aside from its high office, and abrogate its unsurpast opportunity for service. As typical colleges of the West he mentions: Beloit, of Wisconsin; Carleton, of Minnesota; Colorado; Grinnell, of Iowa; Oberlin, of Ohio (hardly a Western institution in our way of thinking); Pomona, of California; and Whitman, of Washington; to which President Crawford, in his introduction, adds the following: Ohio Wesleyan, Kenyon, Lawrence, Lake Forest, Wabash, DePauw, Cornell and Drake.

Undeterred by the awkwardness of the title assigned to him, The Function of the College as Distinct from the High School, the Professional School and the University, President Meiklejohn proceeded to write what seems to the present reviewer the most interesting and stimulating paper of the series. He devotes the first part of his essay to an

attack upon the heresy that there is no genuine education which is not really professional, which characterizes the belief in a "liberal education," separate from and independent of vocational and professional study, as an idle creation of dream and fancy. "You wish to return to the spirit and practise of the old colonial college. Very well, do so; but first recognize that the college which you imitate was itself a professional school;" to which Dr. Meiklejohn replies that the colonial college was not a professional school, nor was it intended to be one. He who would hold to the contrary, must maintain, according to him, two troublesome assertions concerning our colonial forefathers: First, that they did not mean what they said; second, that they did not get what they paid for; and he quotes interestingly and extensively from the early documents of Harvard and Yale and King's College in New York and Brown University to prove his point. Dr. Meiklejohn states that his opponents in this matter have interpreted the purpose of the early college as that of educating men to be ministers; the real purpose, he says, was that of educating ministers to be men. Toward the end of the essay is a delightful discussion of fathers and sons. "The author has known fathers in planning for the training of a son who would see to it that in the preparation for his trade every bit of knowledge he could have must be applied, and the boy must learn that in such a way as to be the leader and the guide, that he may give orders rather than obey them. But how often the same father is unwilling that his boy attempt to understand his own religion, his own morals, his own society, his own politics! In these fields, surely the father's opinions are good enough! Keep the boy's mind at rest regarding his religion and his economics; what has been believed before had better still be believed! It may be bad for business, may interfere with a boy's success if he becomes too much interested in the fundamental things of life. And so such parents invite us to leave the universal things, the things most sacred and significant, to blindness, to the mere drift of custom, to tradition, and rule of thumb."

The last paper is by Commissioner Claxton, on The American College in the Life of the American People. It contains some very interesting and significant statistics which have been collected by his office at Washington and some useful observations which are the fruit of his own educational experience.

If, as the reviewer hopes, Messrs. Holt and Company are required by the demand for the book to print a second edition, it is suggested that George E. Woodberry's name be correctly spelled (p. 113), and that the twenty-third and twenty-fourth lines on page fifty-nine be put in their proper order.

F. P. KEPPEL

COLUMBIA UNIVERSITY

There is an important field as yet largely unoccupied, dealing with the local and institutional history of education in America. We welcome a *History of education in Virginia*, by Professor Heatwole, of the state normal school at Harrisonburg, Virginia, for its simplicity, its directness and its well-balanced treatment of education in the Old Dominion. (New York: The Macmillan Company, 1916. 382 p. $1.00.)

Professor Charles J. Horne, of the College of the City of New York, has prepared in textbook form a *History of the State of New York*. (Boston: D. C. Heath & Company, 1916. 434 p. $1.20.)

It is a long time since we have seen any study of Herder and we specially welcome *Herder as an educator*, by Professor J. Mace Andress, of the Boston Normal School. Herder was, in fact, the forerunner of the modern philosophy of history and of the modern international movement. He will bear much rereading and restudying. (New York: G. E. Stechert & Company, 1916. 316 p. $1.25.)

Miss Elizabeth Hazleton Haight has been fully justified by the result in editing the *Autobiography and letters of Matthew Vassar*. His reflections and opinions previous to the founding of Vassar College are most interesting. (New York: Oxford University Press, 1916. 210 p. $2.00.)

A general treatment of some important topics in international law, made for the layman, is contained in *Rights and duties of neutrals*, by Daniel C. Brewer. (New York: G. P. Putnam's Sons, 1916. 260 p. $1.25.)

Neutrality, its cause and cure, by James Mark Baldwin, is plainly a party pamphlet. It is not very well done or very convincing. (New York: G. P. Putnam's Sons, 1916. 138 p.)

In a little volume entitled *Industrial preparedness*, C. E. Knoeppel deals in cursory fashion with a number of engineering and economic questions which are now demanding public attention. (New York: Engineering Magazine Company, 1916. 146 p.)

A most admirable setting forth of the powers, duties and functions of the president of the United States is contained in ex-President Taft's book entitled *Our chief magistrate and his powers*. The very accurate and illuminating treatment of the subject is embellished with numerous anecdotes and personal touches which make the volume as interesting as valuable. (New York: Columbia University Press, 1916. 165 p.)

It will be useful for intelligent Americans to read *Some historical phases of modern Japan*, by Dr. Sato. The author gives a very interesting and very practical survey of the progress and present status of his nation. (New York: The Japan Society, 1916. 164 p.)

In *Commencement days*, Dr. Washington Gladden has brought together a number of his addresses of advice and counsel to students during various occasions and at different institutions. (New York: The Macmillan Company, 1916. 258 p. $1.25.)

A useful book dealing with personal hygiene, presented from the standpoint of control, is *The principles of health control*, by Professor Francis M. Walters, of the state normal school at Warrensburg, Missouri. The book is marred by its extreme and unwarranted assertions in regard to alcohol. (Boston: D. C. Heath & Company, 1916. 462 p. $1.50.)

An unusual and well balanced survey of the field of business activity is contained in the volume entitled *Commerce and industry*, by Professor J. Russell Smith, of the University of Pennsylvania. (New York: Henry Holt & Company, 1916. 596 p. $1.40.)

A useful study in comparative educational systems is *The industrial and commercial schools of the United States and Germany*, by Professor F. W. Roman, of Syracuse University. The book is unfortunately without an index. (New York: G. P. Putnam's Sons, 1915. 382 p. $1.50.)

Sr. Mariano Maresca who has written much and wisely on education for a number of years past is the author of *Le Antinomie dell' Educazione* which will not only repay reading, but which might well be translated into English. The examination he offers of the contradictory elements which appear in education and of ways and means of combining them into a new synthesis should receive, and will repay careful study and discussion. (Torino: Fratelli Bocca, 1916. 155 p. 21 50.)

The late Mr. Theodore C. Williams, always an enthusiastic student of the classics, completed just before his death a rendering into English verse of the *Georgics* and *Ecologues* of Virgil. This rendering is now published with a charming introduction by Professor George H. Palmer, of Harvard. (Cambridge: Harvard University Press, 1915. 166 p. $1.00.)

Librarians and others looking for a guide to the literature on subjects relating to the other American republics will be assisted by a study by Mr. Peter H. Goldsmith's *Brief bibliography of books in Spanish and Portuguese relating to the countries commonly called Latin America*. Some of the author's comments are more frank and blunt than judicious. (New York: The Macmillan Company. 102 p. $1.00.)

In *The philosophy of painting*, Dr. Ralcy H. Bell has treated with evident enthusiasm and wide knowledge some of the most important subjects that underlie the fine arts. (New York: G. P. Putnam's Sons, 1916. 238 p. $1.25.)

X

NOTES AND NEWS

Resignation of President Slocum

After twenty-eight years of devoted and unusually successful service, President Slocum of Colorado College has tendered his resignation to the trustees. While Dr. Slocum is in no sense an old man, he feels that the time has come when he is entitled to ask relief from the heavy burden that he has been carrying for more than a quarter of a century. The resignation of President Slocum is an event of high importance, not only to Colorado, but to the entire west and to the cause of college education everywhere. He has fortunately had a clear and sound conception of the work of an American college and he has held Colorado College steadily on the course toward the achievement of his ideal.

When President Slocum was appointed he found an institution with a student body numbering less than thirty, and almost entirely resident in the city of Colorado Springs. Some of the college campus had been sold for unpaid taxes, there was but one building, and the equipment amounted to nothing. Such funds as the college had had were exhausted and the institution was in debt. Certainly it took courage and devotion to high principle to take up the task of building a college on so meager a foundation. What President Slocum has accomplished is a matter of history and of national pride. He leaves behind him a student body of nearly eight hundred and a teaching force of more than one hundred. The endowment fund amounts to about $1,500,000. Fourteen buildings well designed and well built adorn the campus, and more than $100,000 has been expended on their construction. Thirty-one well-equipt laboratories are in the service of the college, and the library consists of more than 100,000 volumes and one-half as many pamphlets.

Better and more significant than these material evidences

of prosperity, is the fact that Colorado College has been for many years a veritable lighthouse of sound learning and of educational inspiration. Scholarly standards have been fixt and maintained, strong men and women have been brought to join the teaching force. The influence of the college is everywhere recognized as admirable, and it is reckoned justly in the small group of excellent American colleges of liberal arts.

President Slocum found a discouraging prospect. He has converted it into a most significant accomplishment.

The educational congress at San Francisco

Le Congrès International d'Education by Ferdinand Buisson is the reprint in pamphlet form of an article originally published in the January, 1916, number of the Revue Pédagogique on the international educational conference at the San Francisco Exposition, held at Oakland from the sixteenth to the twenty-second of August, 1915. The author, who was an official delegate from France to the congress, writes in a way that is interesting as embodying the impressions of a foreign observer and a Frenchman.

A foreigner, he states, could not but be keenly aware of the noticeably different way in which a congress is conducted here and abroad; and the American method, by which speaker succeeds speaker without necessarily answering his predecessor, impresses him with its restraint and dignity.

A translation with a full analysis is given of the two documents which he considers were fundamental and embody the vital conclusions arrived at by the congress, viz., the declaration of principles, drawn up by the committee on resolutions, and the address of Chancellor Elmer E. Brown, delivered at the opening session.

The most vivid impression, according to the pamphlet, that M. Buisson took away with him was the idealistic character of a country which sets for its schools such a far-reaching and comprehensive program of accomplishment. The last paragraphs of the pamphlet deserve to be given in full.

"From the publications of the congress at Oakland, as from the entire American educational press, there is one distinct impression to be gained, namely, that the United States is a country thoroly convinced that it occupies the first place in the world in rational education, and that there is the necessity still of educational growth and improvement.

"The contrast of these two equally emphasized thoughts gives a unique tone to American publications. No other people perhaps has so much pride as well as so much modesty, so great courage of opinion or heights of ambition. No people has ever attempted greater things; no people has ever recognized more quickly how much more still remains to be done.

"That is the peculiar tone of American educational thought. Neither their own praise nor blame disturbs them. The dominant note, for the past and the future, is an unshakable faith in their own possibilities; a faith that is neither self-satisfied pride nor utopian dreams. It is the consciousness of a force which asks only for expression. There is no bitterness for past mistakes, there are no reproaches or recriminations from one party to the other. The reforms of tomorrow are met with no systematized opposition, no *a priori* distrust or misconceptions, but a hearty obedience to the law of progress.

"Take even the most official documents, that give the point of view of the administration only, the books of rules and regulations, rather analogous to our Code Richard. Take, for example, the treatise on school administration, bearing the names of Professor Dutton and Mr. David Snedden, superintendent of schools of the State of Massachusetts. There you will find the existing legislation on every subject and the resulting conditions in various parts of the United States. But there is not a trace of self-satisfaction. There is not one of these statements that does not end in a thoro survey of desirable changes, acknowledged deficiencies, proposals and discussions of reforms, and the new methods which are being instituted. Statements from the highest officers never show the least

trace of ill-natured or spiteful criticism of the many innovations. Rather it is quite evident that they favor any improvement whatsoever which will increase the power and efficiency of the school, the extent and depth of its results, and its part in the general good of the nation.

"In this country no improvement or innovation comes in conflict with unbelief. It is quite natural here that everything should be continually in motion. To govern is to foresee. To foresee is to recognize the indefinitely increasing demands of the country on its schools. To-morrow must produce more than today. 'Go ahead' is the watchword of the New World, and the motto of its educators."

General Education Board

The report for 1914–15 of the General Education Board shows a gross income from the Board's resources of $2,230,425.41. In addition, the Jeans fund, which is administered by the Board, yielded an income of $7,910.46. Out of this was expended during the year a total of $1,638,842.91: of which $1,280,000 went to colleges and universities; $233,650 to education in the Southern States; $31,000 to farm demonstration in Maine and New Hampshire; $32,500 to educational investigation and research; and $61,692.91 to the expenses of administration.

The appropriations to colleges and universities, with the exception of Washington and Lee University which receives a special appropriation of $5,000, according to the policy adopted at the beginning of the activity of the Board were invariably made as subscriptions to stated additions to the permanent endowment funds of the institutions in question. In this way, to Vanderbilt University was appropriated $300,000 toward a total fund of $1,000,000; to Goucher College $250,000 toward a fund of $1,000,000; to Vassar College $200,000 toward a fund of $1,000,000; to Ohio Wesleyan University $150,000 toward a fund of $600,000; to Denison University $125,000 toward a fund of $500,000; to Colorado College $125,000 toward a fund of $500,000;

to Pomona College $100,000 toward a fund of $500,000; and to Davidson College $25,000 toward a fund of $100,000. The report reaffirms the attitude of the Board in this matter. It seeks to assist in the development of well-established institutions, it is stated, which appear to be "necessary factors in a well-organized and well-distributed permanent system of higher education." Its contributions are made to endowment, it goes on to say, since experience shows that buildings, grounds and apparatus are as a rule more easily obtainable; and gifts are not contributed for the support of particular departments, chairs, or lines of work, because such special designation might operate as a restriction upon the freedom of the institution in carrying out a possible policy of development, or in readily responding to future changed conditions. Of the eight institutions named, four have close denominational relations, one has no denominational connection whatever. They differ also largely in the geographical extent of their appeal and in academic standing. "The Board," says the report, "makes no requirements and advocates no particular policy in such matters. Having satisfied itself of the usefulness and high educational ideals of an institution, it leaves its officers and trustees absolutely free in its educational management" —which is doubtless a reasonable attitude, if the judgment of the Board is well founded that the institutions thus supported are on the upward way toward the fulfilment of recognized educational standards.

The Board continued along previously determined lines its work in the Southern States. It has maintained cooperative relations with departments of education, and has supported rural school agents, professors of secondary education, and agents for negro education. "Despite differences in local conditions," the report continues, "necessitating more or less variety of effort in different states, the Southern States are consciously working toward a single goal—an adequately organized, financed, administered, supervised and manned state system of education." In carrying out this program, new courses of study have been

worked out, Teachers' Institutes have been enlarged and improved, consolidation has been promoted, and a stricter certification of teachers has been secured.

The report is enthusiastic in its praise of the full-time plan in clinical instruction, organized at Johns Hopkins University with the support of the Board and in operation during the year. "Thus far," it is stated, "it has more than justified the sanguine expectations of those who favored the experiment. No serious problems of administration have arisen in consequence of the thoro-going reorganization which it involved. The transition was made without jar or friction; and it is the unanimous testimony of those concerned both with hospital administration and instruction that every interest concerned has, up to this time, benefited by the change."

The chapter of the report on educational research outlines some interesting plans of future activity. From time to time, it states, the Board will undertake to make possible the preparation of scientific monographs dealing with the larger questions of education. Arrangements have already been made for an exhaustive investigation of the technique of handwriting and reading; an invitation has been accepted from the school authorities of Gary, Ind., to make a thoro study of the schools of that city; and a handbook is in course of preparation on college and university accounting.

This second report of the General Education Board is, like its predecessor, the record of an extraordinarily extended educational effort carefully and intelligently applied. Some of these activities are in their very nature experimental, and longer experience alone can tell of the actual and permanent effect of their operation. There is no great question at the present time, however, of the wide-spread influence for good already exerted by the Board, or of the even wider influence that with the careful management that has thus far characterized the conduct of its affairs it may continue to exert in the future.

Josiah Royce

By the death, on September 14 at his home in Cambridge, of Josiah Royce, Alford professor of natural religion, moral philosophy and civil polity at Harvard University, there past away one of the finest minds that America has yet produced. He was literally and without exaggeration one of the greatest constructive thinkers of his day and generation. After the late William Torrey Harris, who was *facile princeps*, Professor Royce takes highest and lonely rank in the meager list of American philosophers. Professor Royce was a real philosopher and not merely one of the numerous and growing band of those who persist in using the name philosophy without any understanding or appreciation of the thing itself. Professor Royce's written style was sometimes overwrought, tho he never lacked in clearness or in coherence. The EDUCATIONAL REVIEW remembers gladly that he contributed a powerful and much-discust article to its opening number in 1891, and that he was a frequent correspondent and occasional contributor until the close of his life. With Harris and Royce already gone, and with Howison in retirement, philosophy in America stands in sore need of a new voice.